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#4/19/03
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Rawlins *et al.*

Appl. No. 09/986,764

Filed: November 9, 2001

For: **Method and Apparatus for Reducing DC Offsets In A Communication System**

Confirmation No. 5623

Art Unit: 2631

Examiner: Vo, Don Nguyen

Atty. Docket: 1744.1330000

Letter to PTO Draftsman: Submission of Formal Drawings

Commissioner for Patents
Washington, D.C. 20231

Sir:

Submitted herewith are eighty one sheets of formal drawings with Figures: 1A-1D, 2, 3A-3G, 4, 5, 6A, 6B, 7A, 7B, 8-12, 13A-13I, 14-23, 24A, 24B, 25A, 25B, 26-30, 31A, 31B, 32A, 32A-1, 32A-2, 32A-3, 32A-4, 32B, 32B-1, 32B-2, 32B-3, 33-52, corresponding to the informal drawings submitted with the above-captioned application. Identification of the drawings is provided in accordance with 37 C.F.R. § 1.84(c). Acknowledgment of the receipt, approval, and entry of these formal drawings into this application is respectfully requested.

It is not believed that an extension of time is required, other than any already provided herewith. However, if an extension of time is needed to prevent abandonment of the application, then such extension of time is hereby petitioned. The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Michael Q. Lee

Attorney for Applicants
Registration No. 35,239

Date: 4/3/03

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SKGF_DC1:110919.1

Appl. No. 09/986,764; Filed: November 9, 2001
Dkt. No. 1744.1330000: Group Art Unit: 2631
Inventors: Rawlins *et al.*; Tel: 202/371-2600
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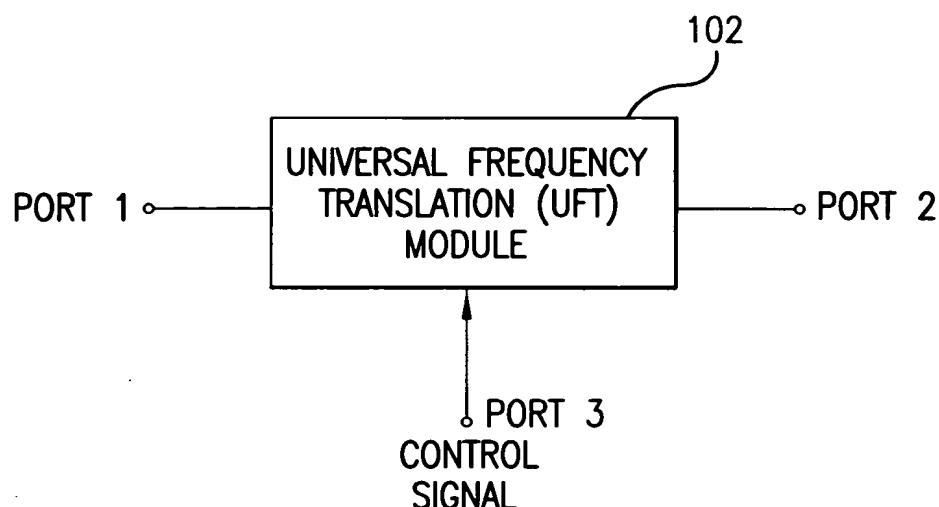
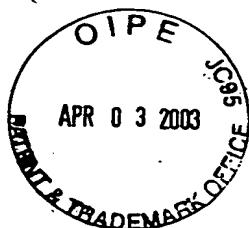


FIG. 1A

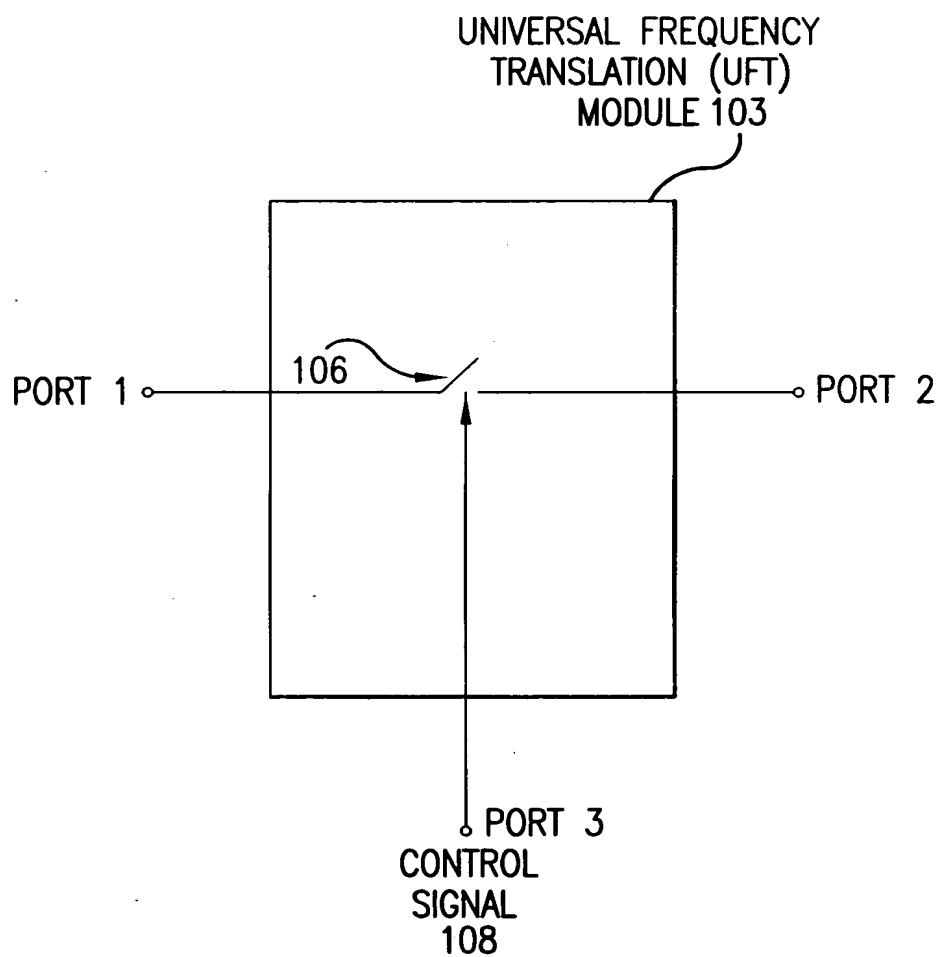


FIG. 1B



UNIVERSAL FREQUENCY
DOWN-CONVERSION
(UFD) MODULE 114

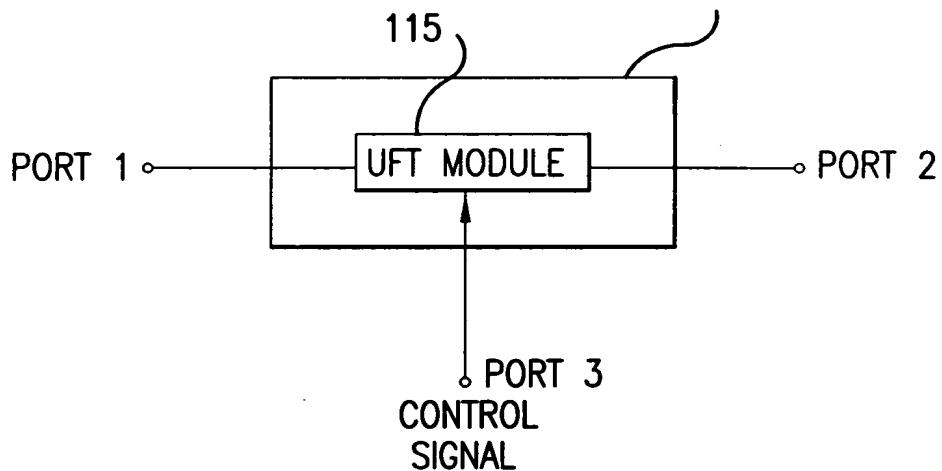


FIG. 1C

UNIVERSAL FREQUENCY
UP-CONVERSION
(UFU) MODULE 116

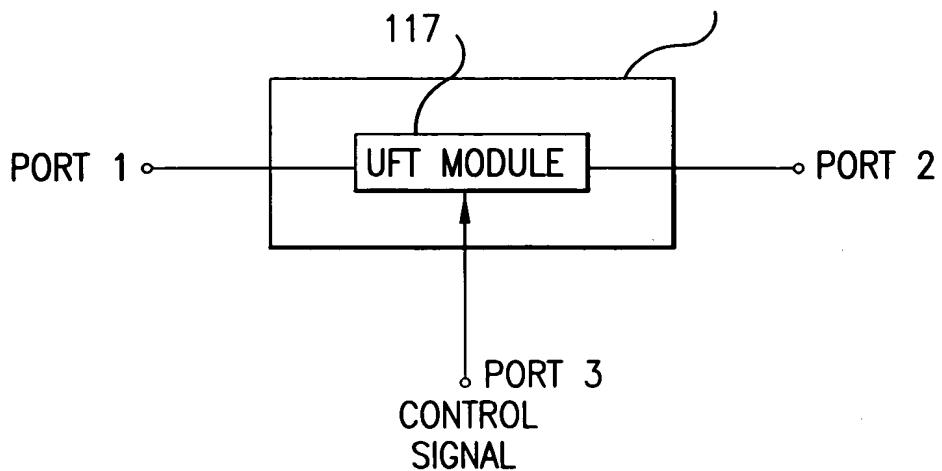


FIG. 1D

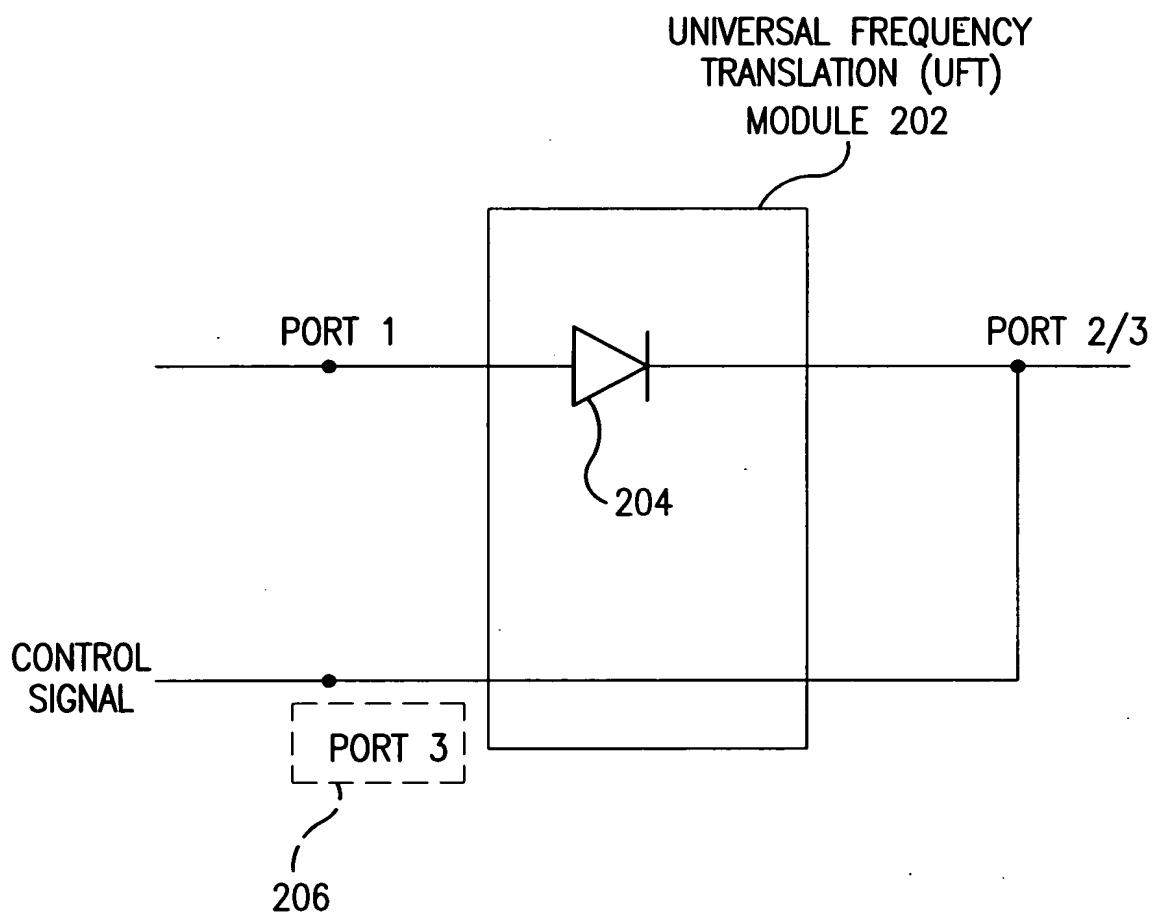


FIG. 2

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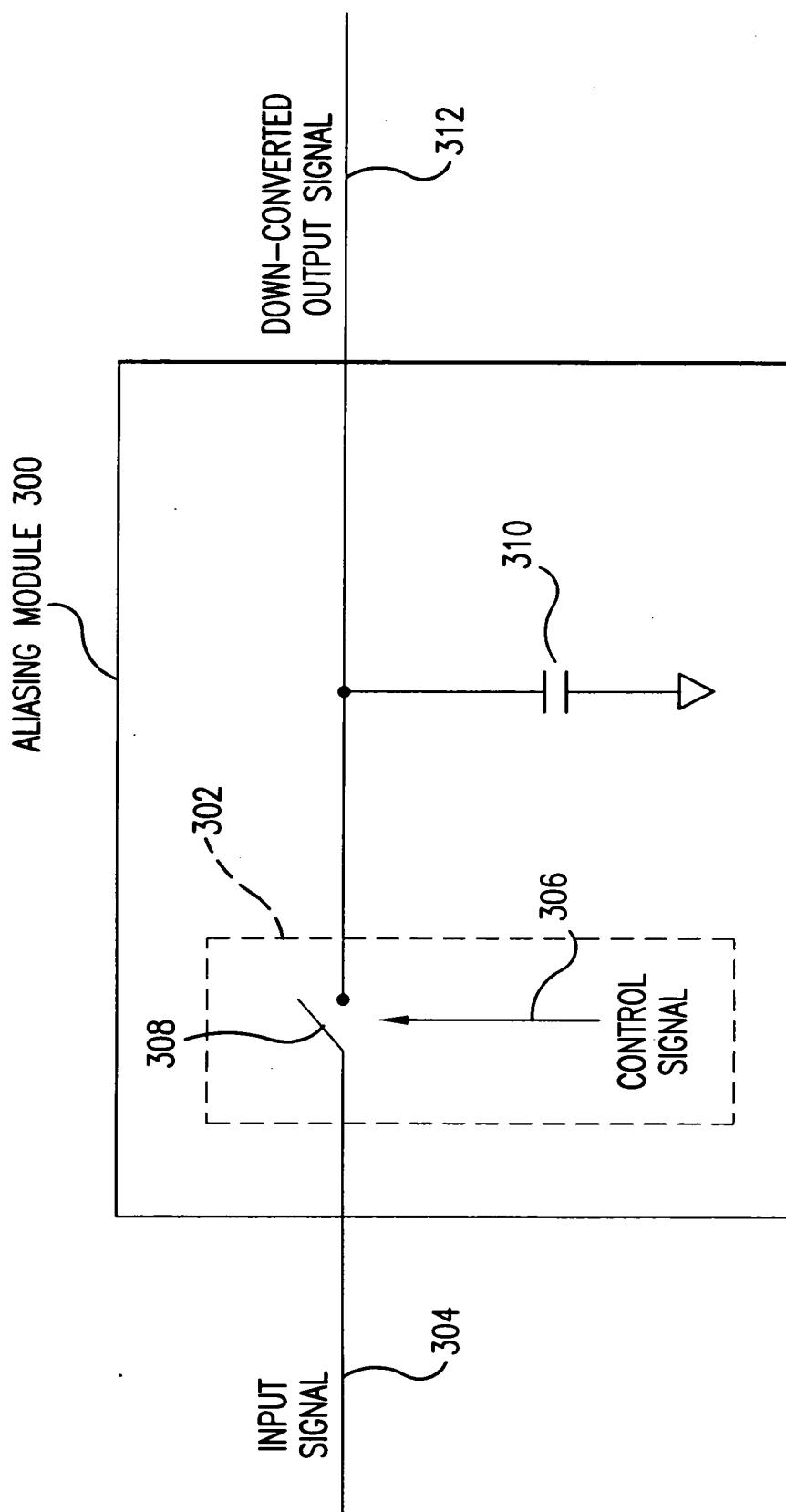


FIG. 3A

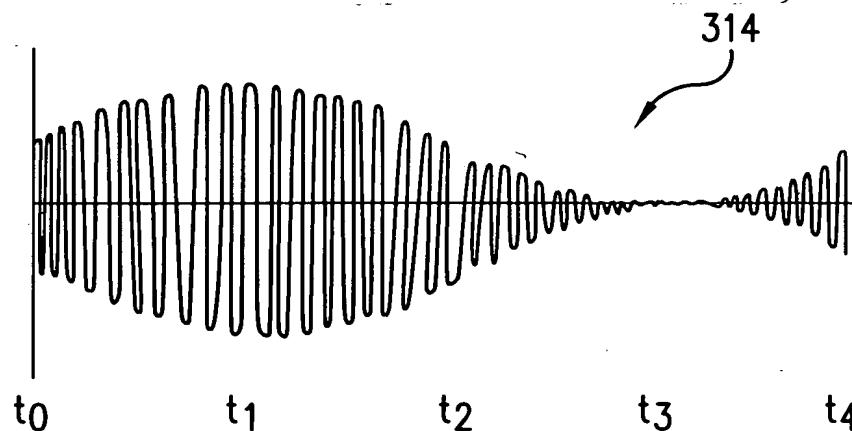


FIG. 3B

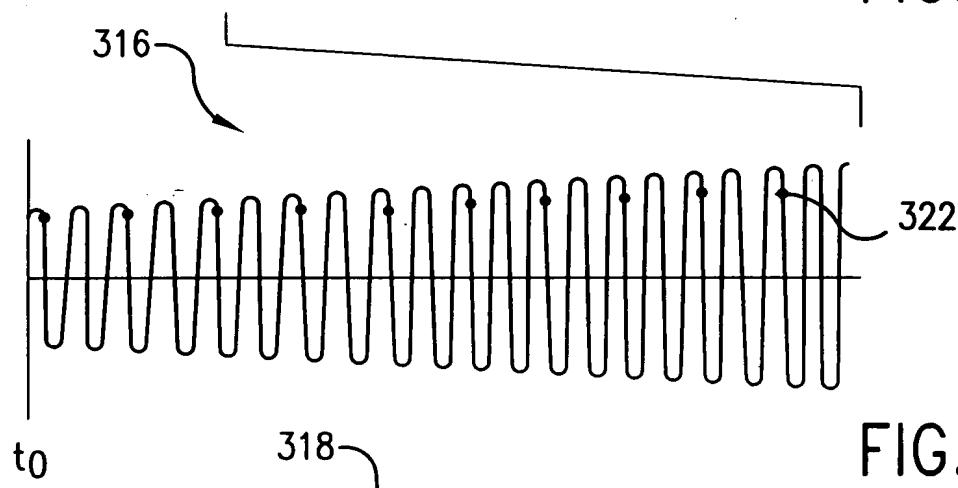


FIG. 3C

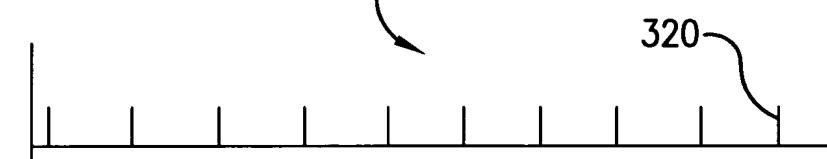


FIG. 3D

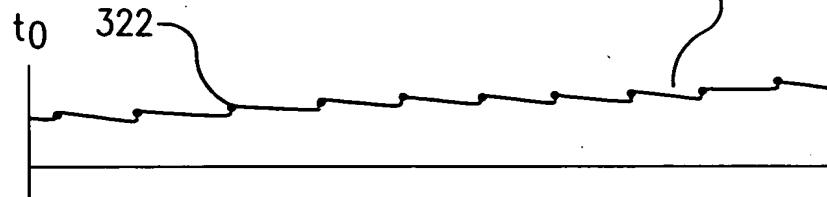


FIG. 3E

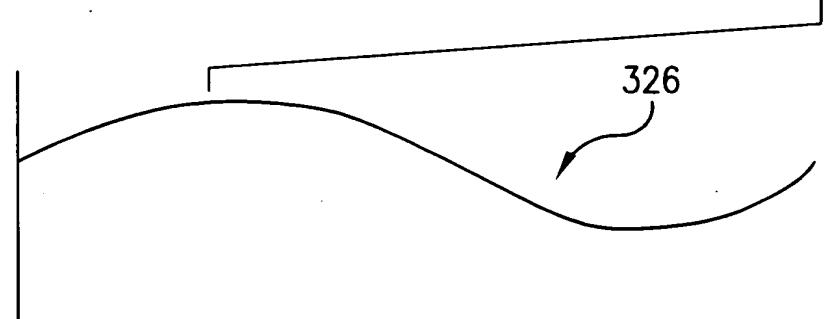


FIG. 3F

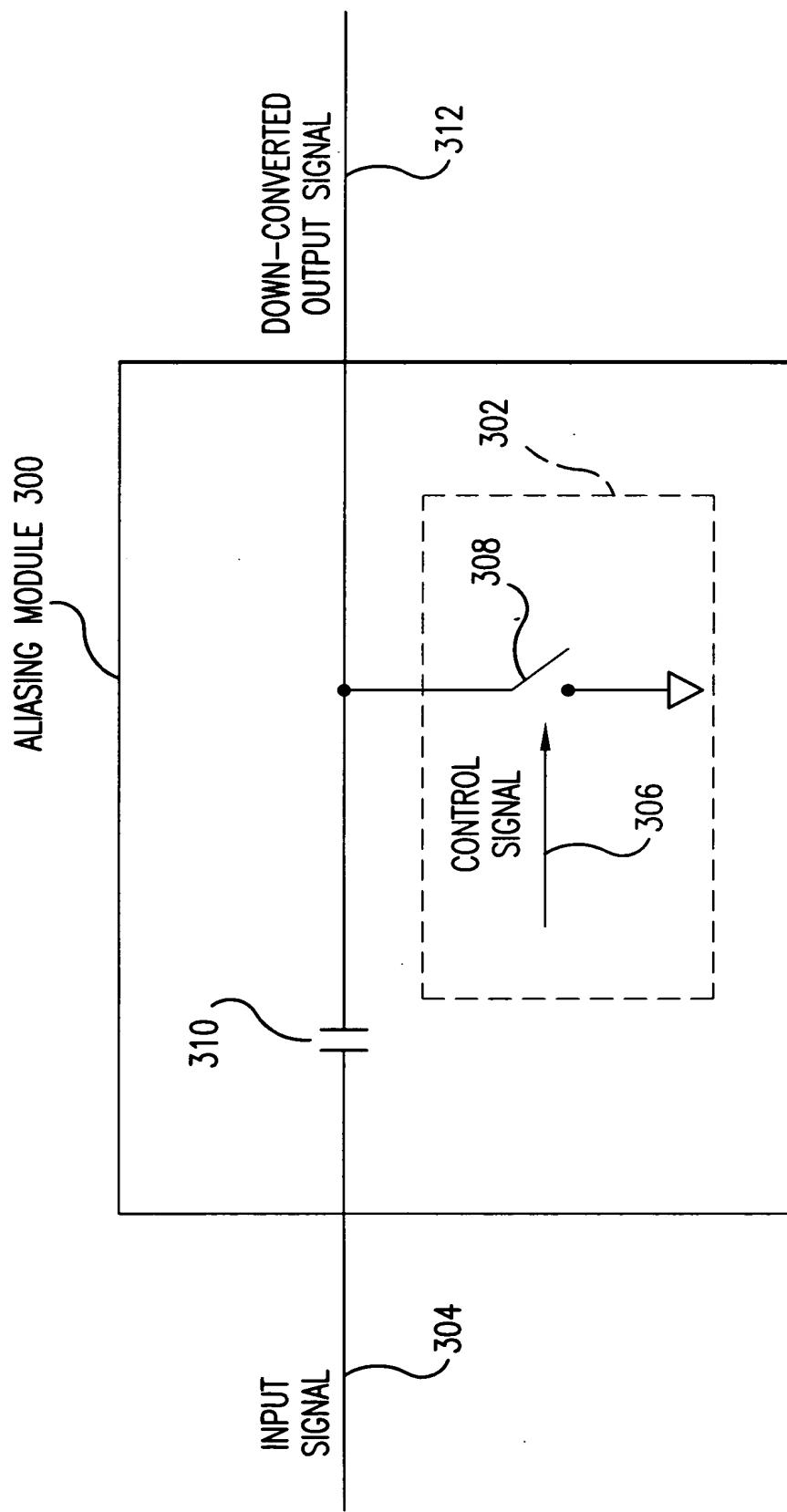


FIG. 3G

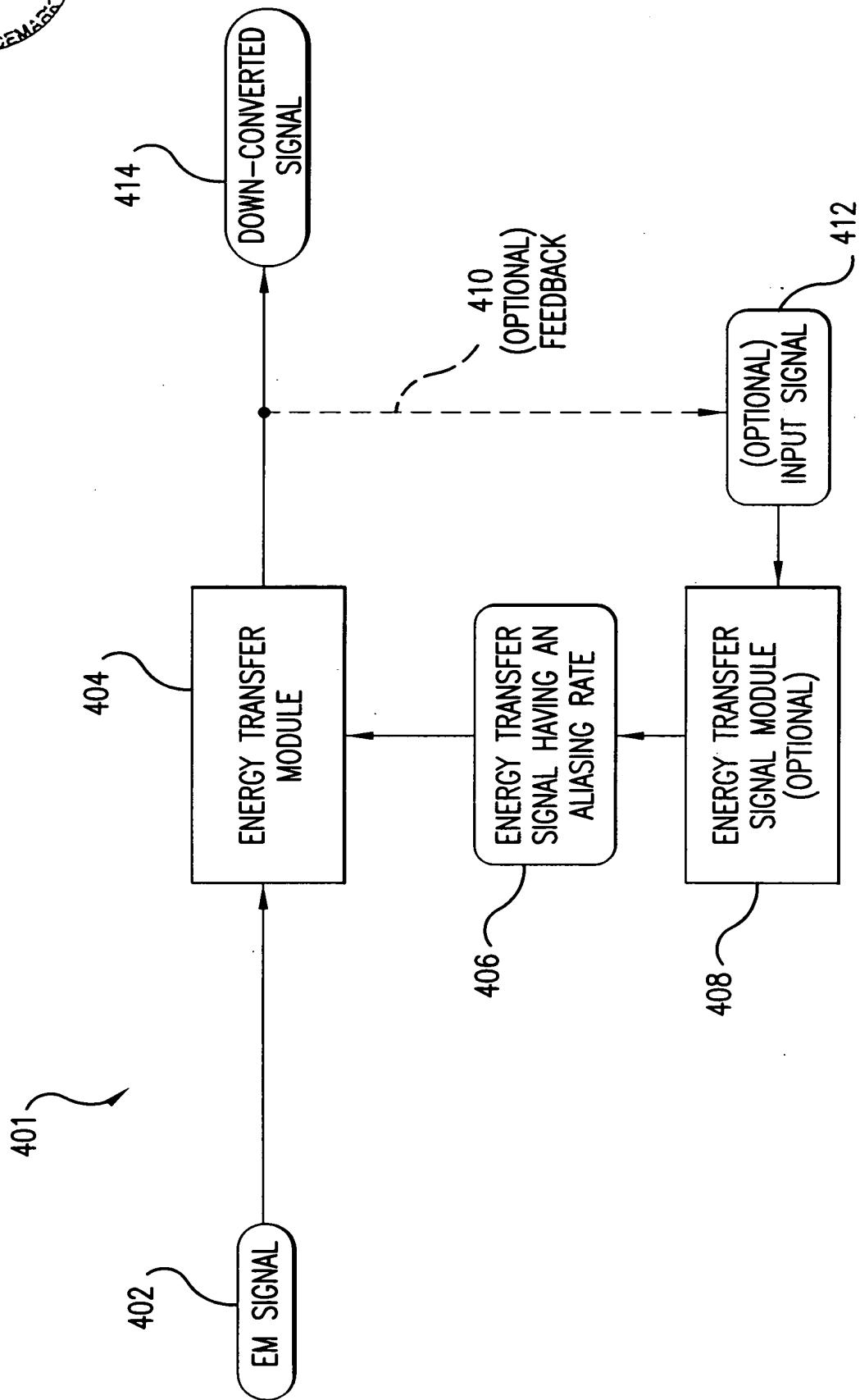


FIG. 4

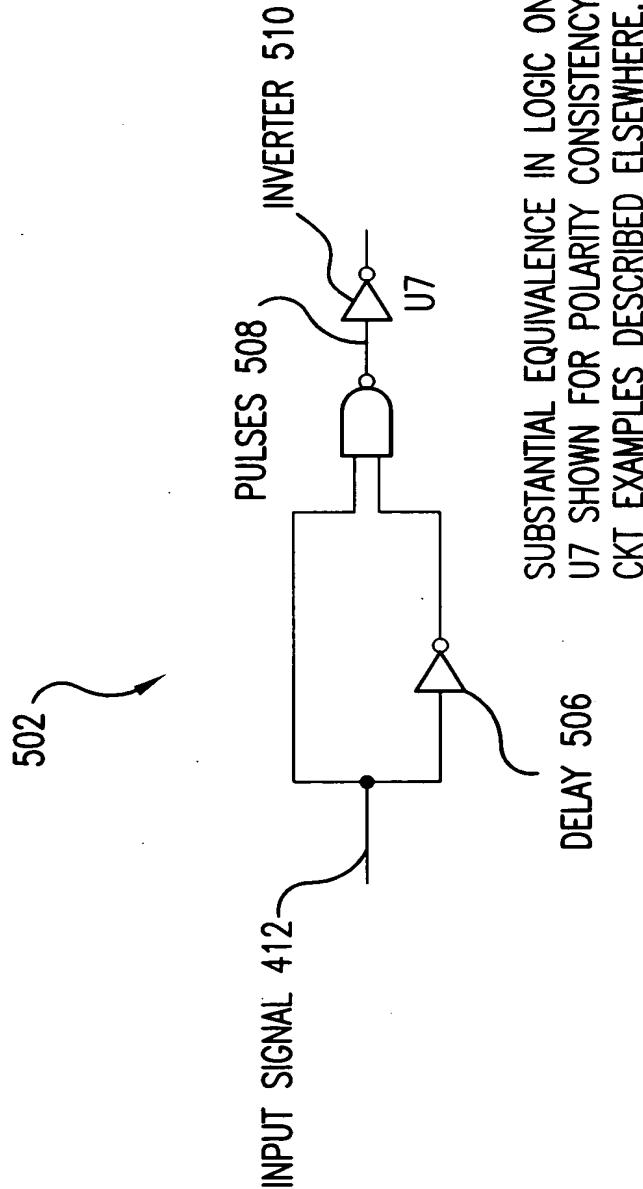


FIG. 5

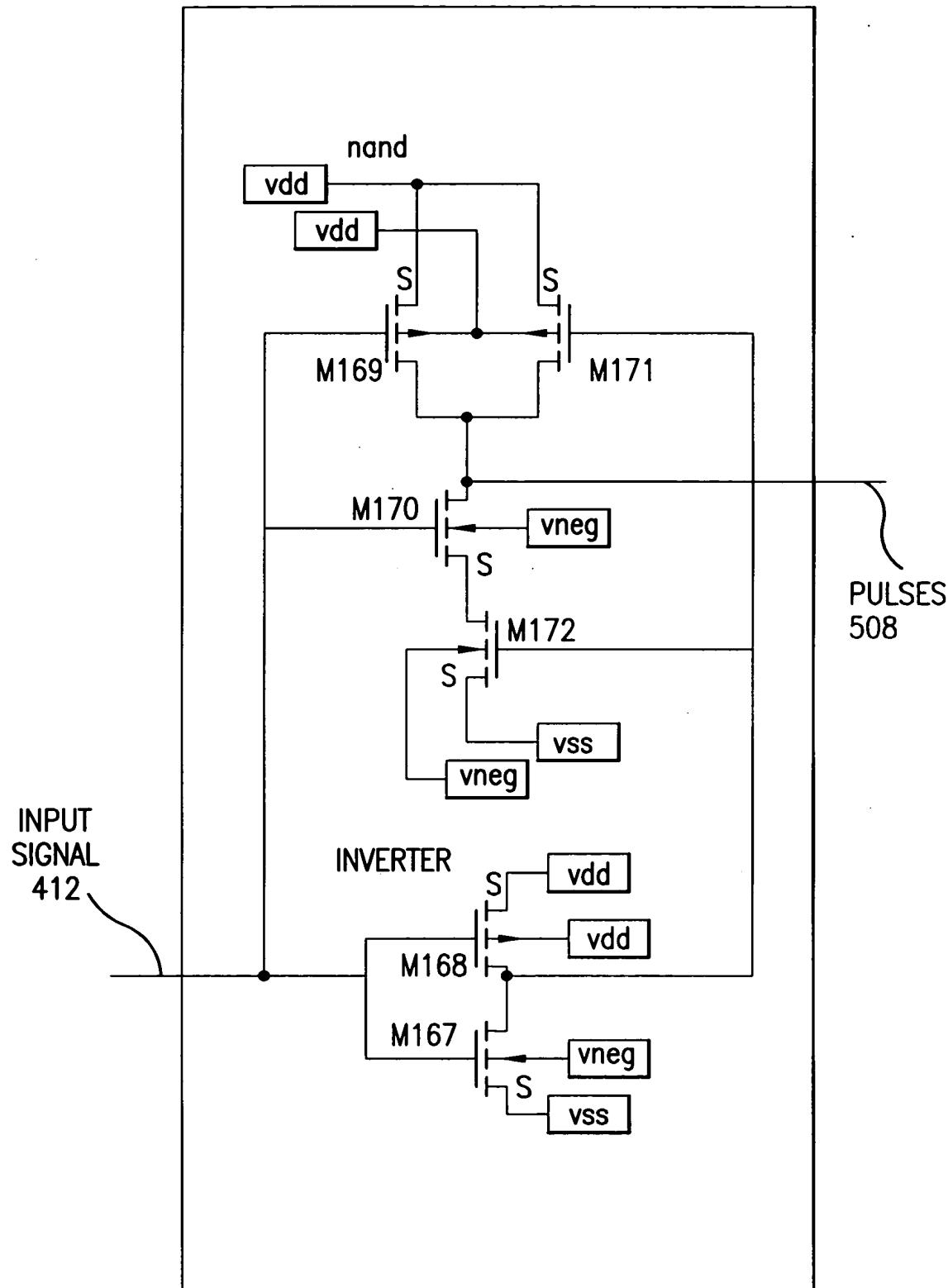


FIG. 6A

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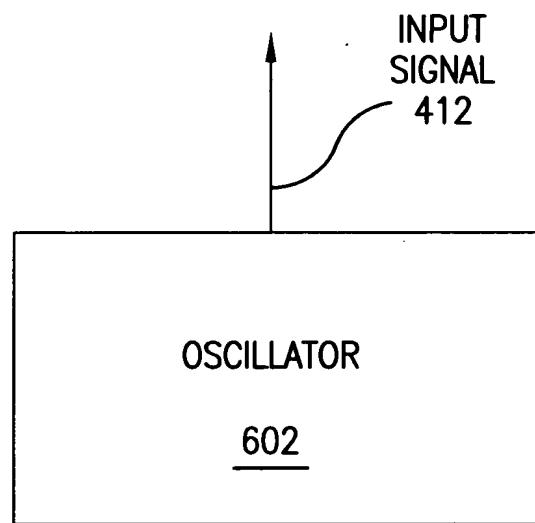


FIG. 6B

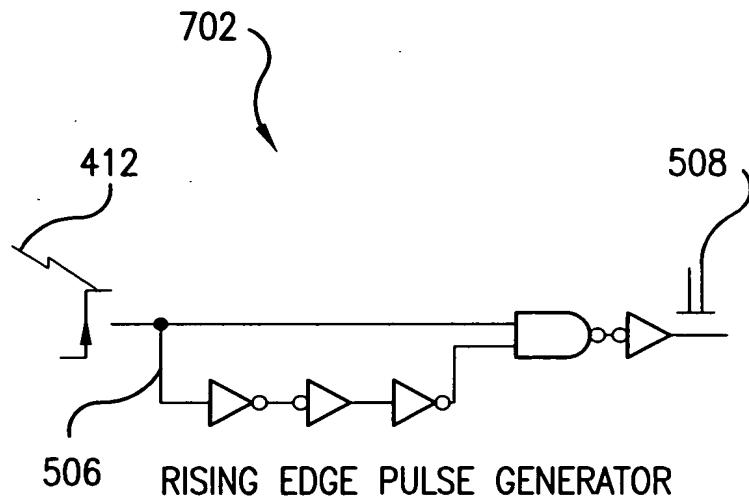


FIG. 7A

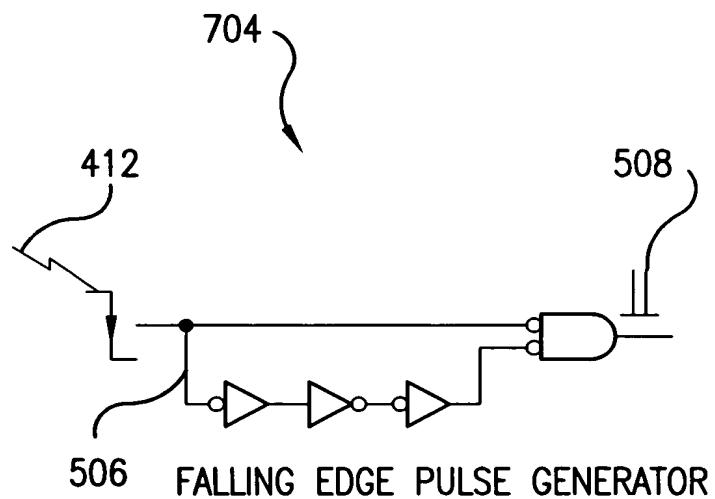
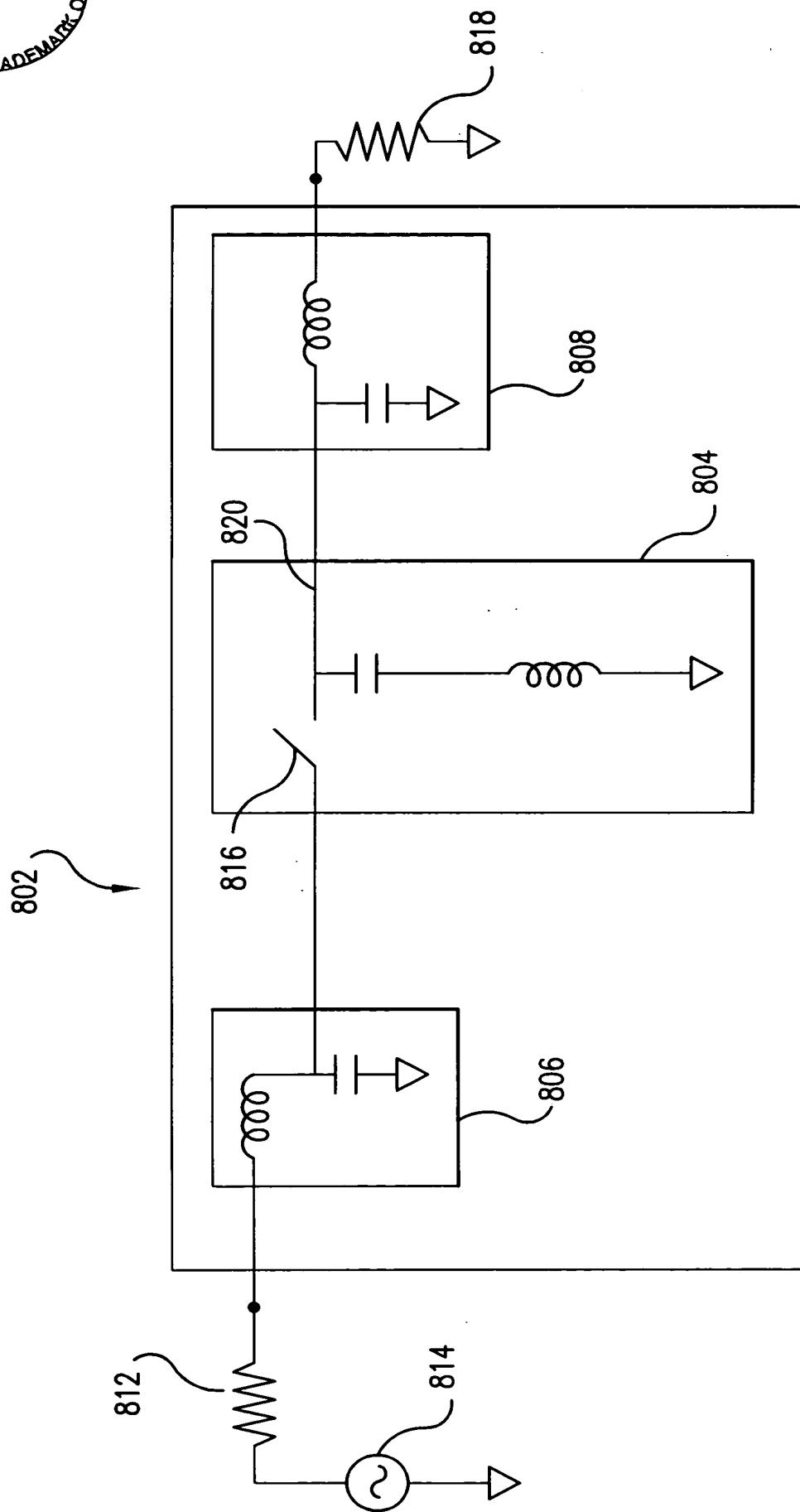
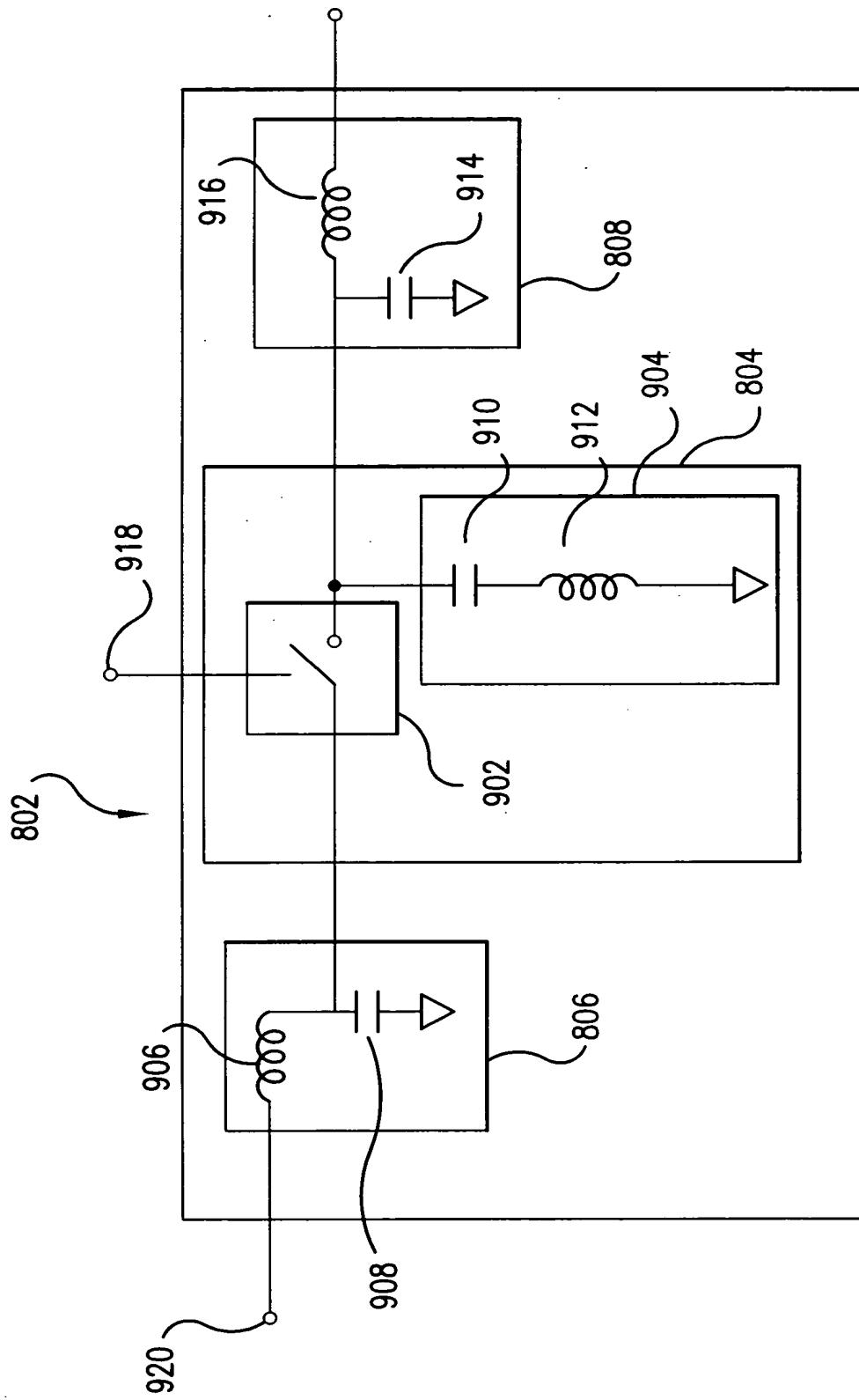


FIG. 7B



IMPEDANCE MATCHED ALIASING MODULE

FIG. 8



ALIASING MODULE

FIG. 9

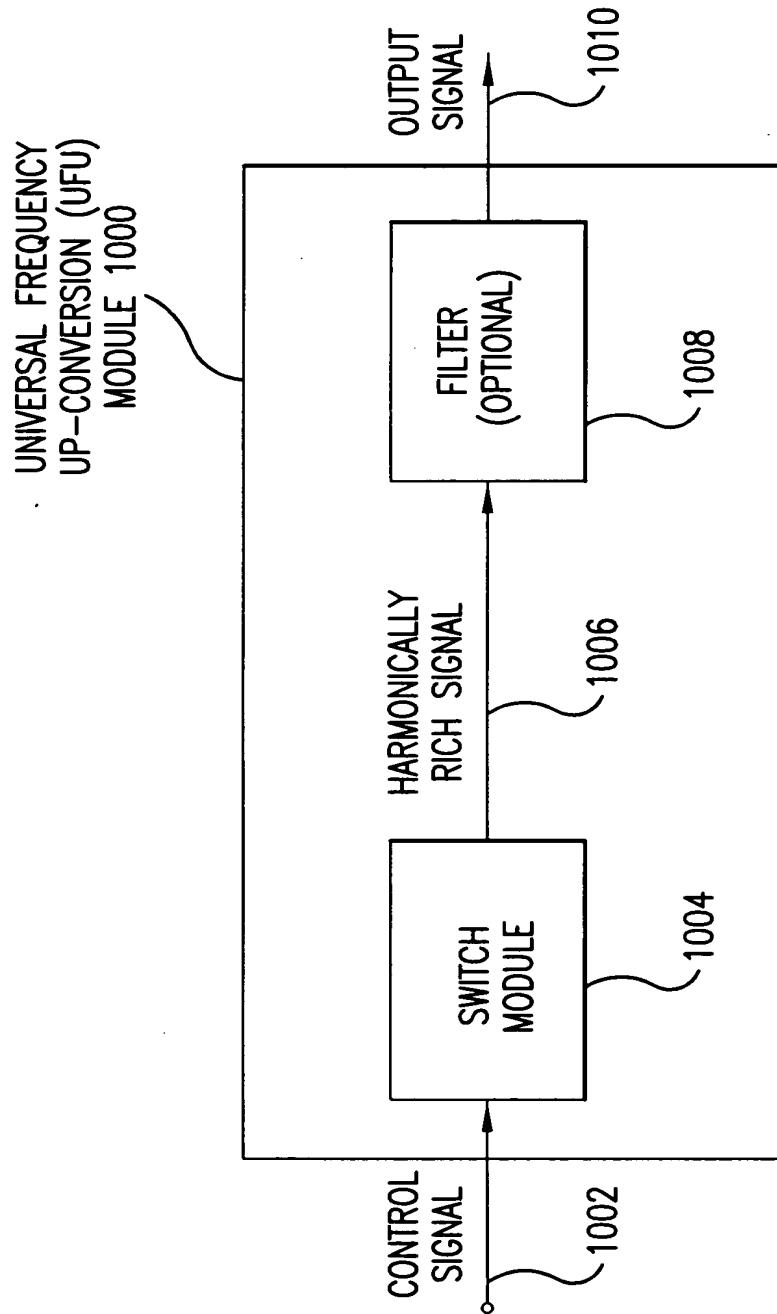


FIG. 10.



UNIVERSAL FREQUENCY
UP-CONVERSION (UFT)
MODULE 1101

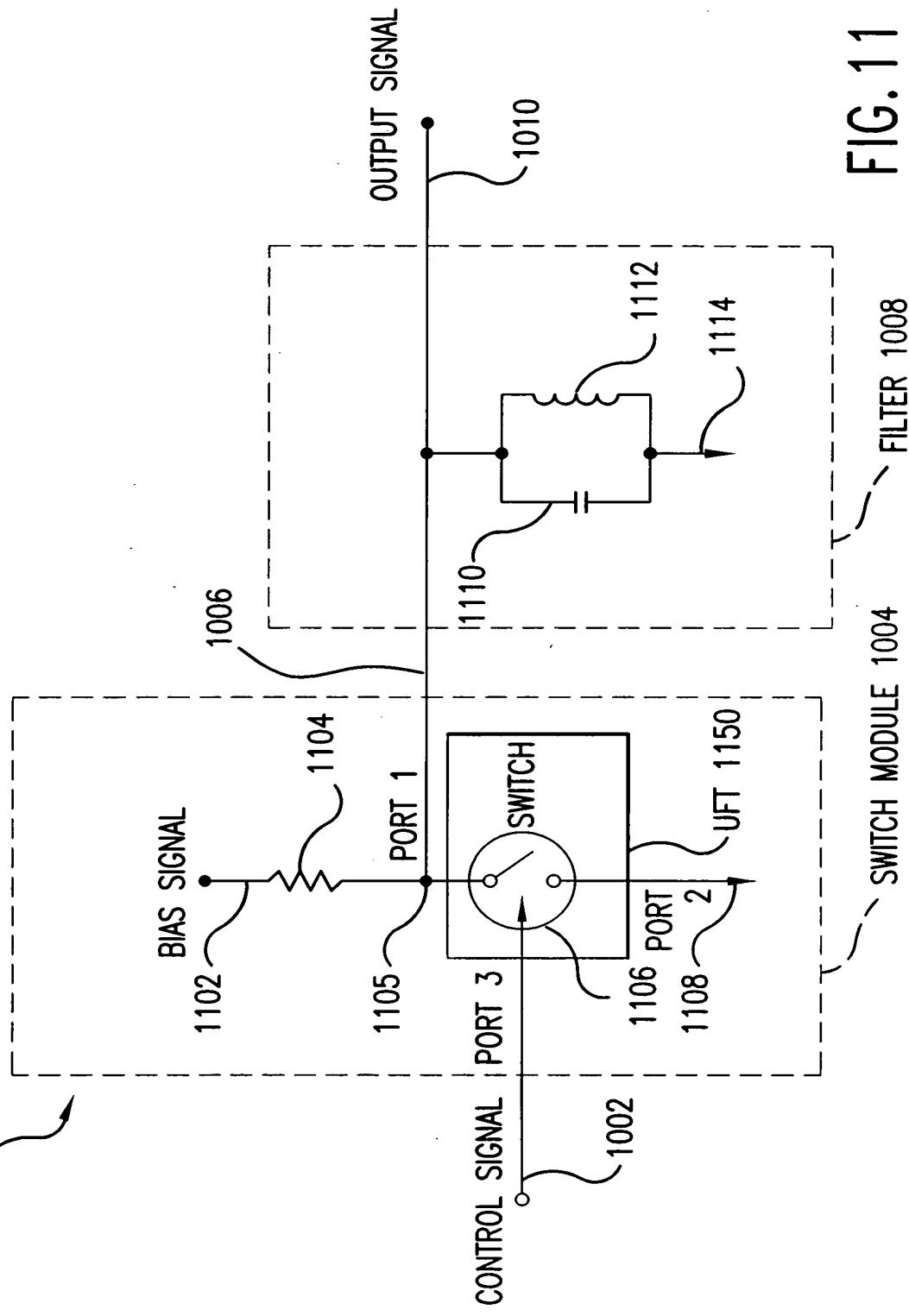


FIG. 11



UNIVERSAL FREQUENCY
UP-CONVERSION
(UFU) MODULE 1290

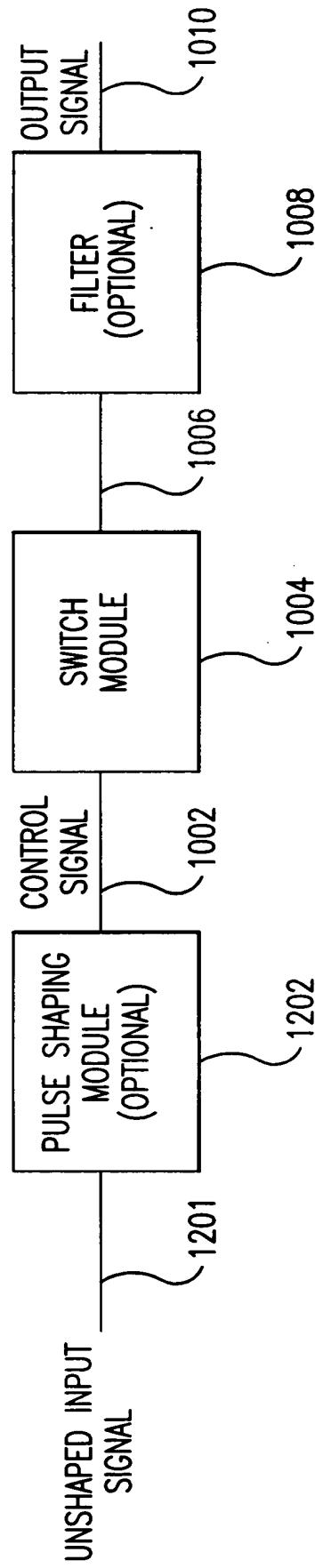


FIG. 12

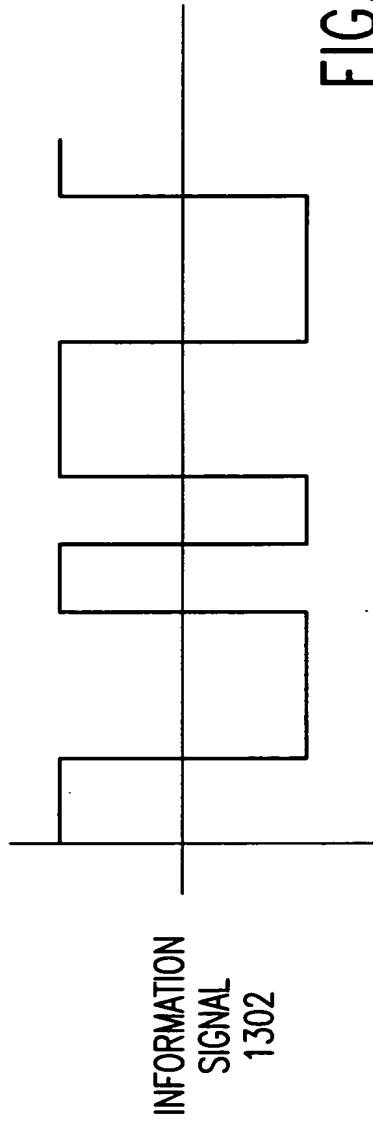


FIG. 13A

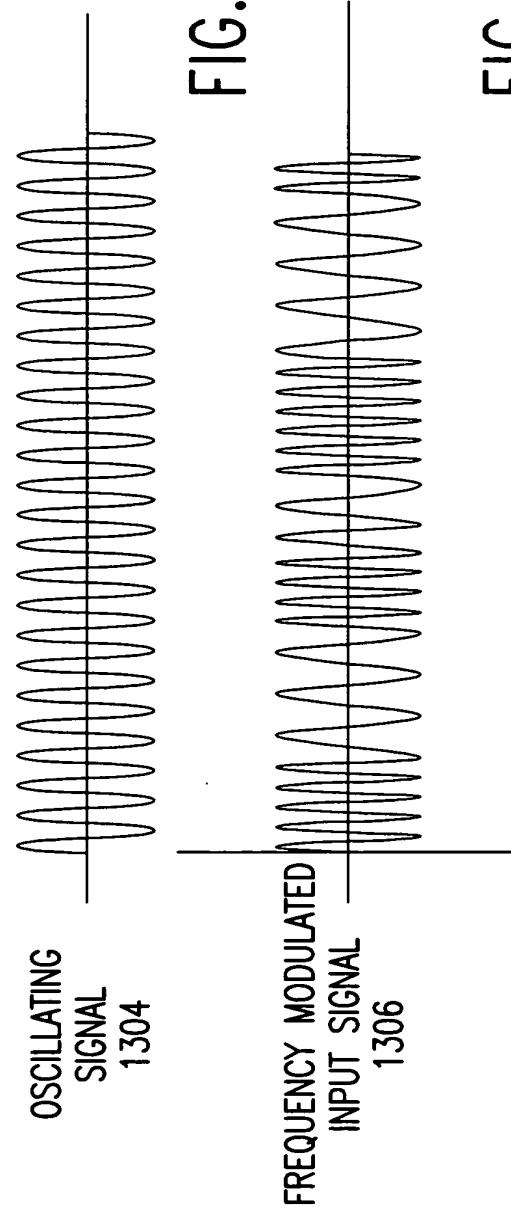


FIG. 13B

FIG. 13C

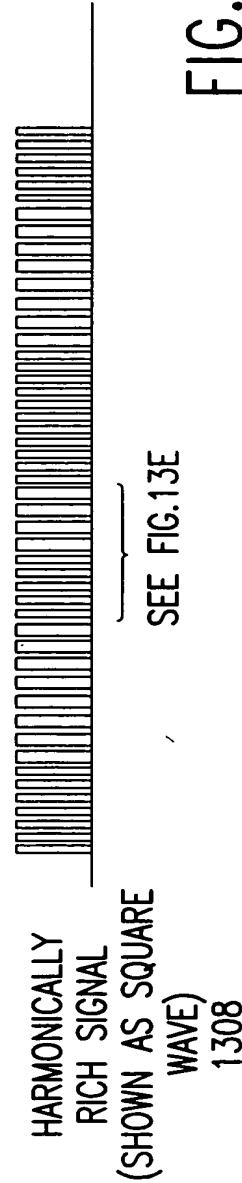
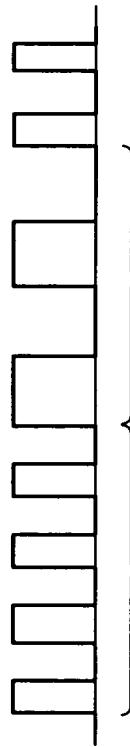


FIG. 13D



EXPANDED VIEW OF
HARMONICALLY RICH
SIGNAL 1308

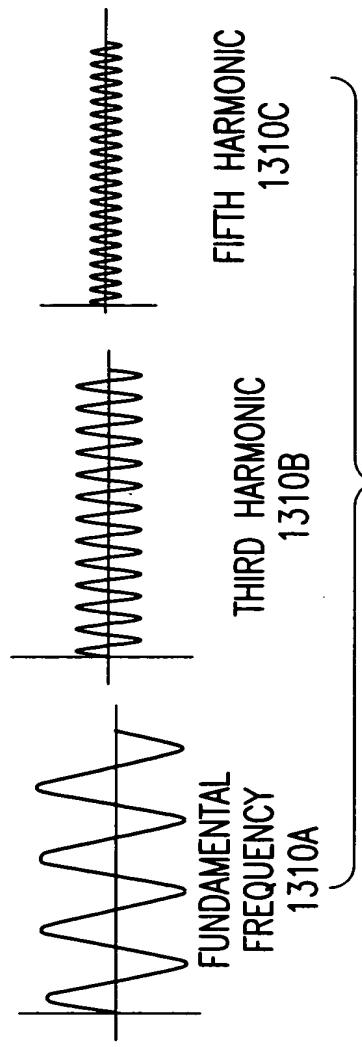


1312

SEE FIG. 13F

FIG. 13E

HARMONICS OF
SIGNAL 1310
(SHOWN SEPARATELY)

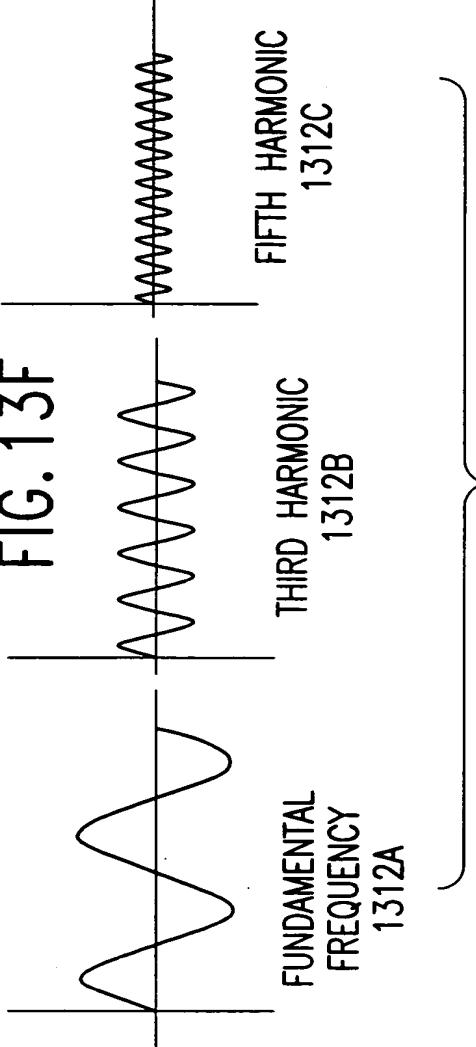


1310B

FIFTH HARMONIC
1310C

THIRD HARMONIC
1310B

HARMONICS OF
SIGNAL 1312
(SHOWN SEPARATELY)

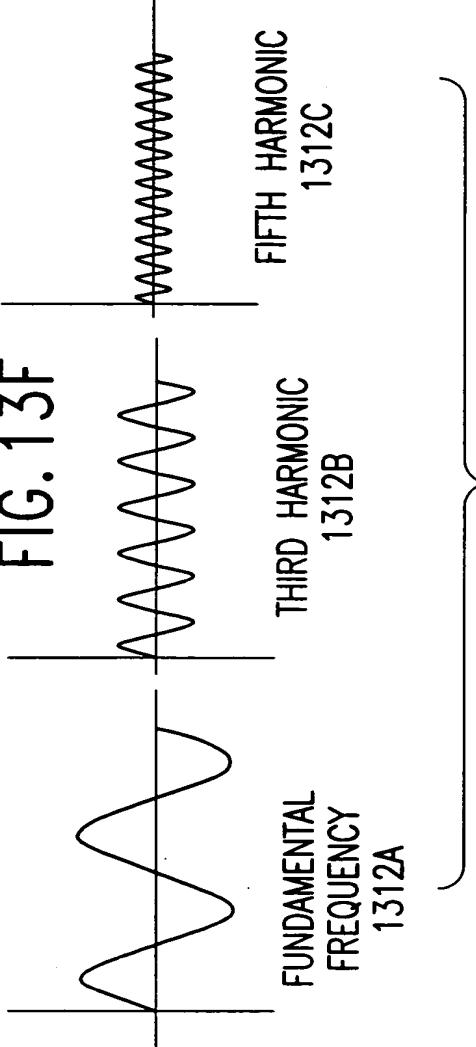


FUNDAMENTAL
FREQUENCY
1312A

THIRD HARMONIC
1312B

FIFTH HARMONIC
1312C

FIG. 13F



FUNDAMENTAL
FREQUENCY
1312A

THIRD HARMONIC
1312B

FIFTH HARMONIC
1312C

FIG. 13G



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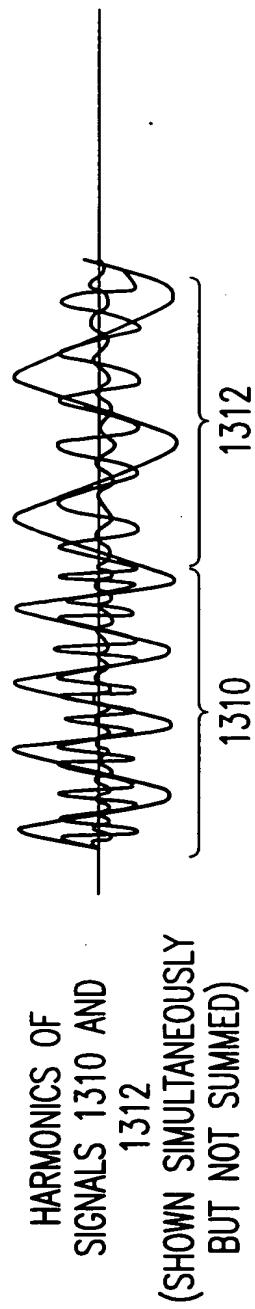


FIG. 13H

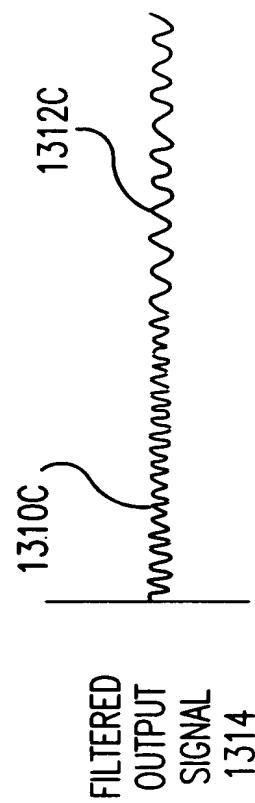


FIG. 13I



UNIFIED DOWNCONVERTING AND
FILTERING (UDF) MODULE 1402

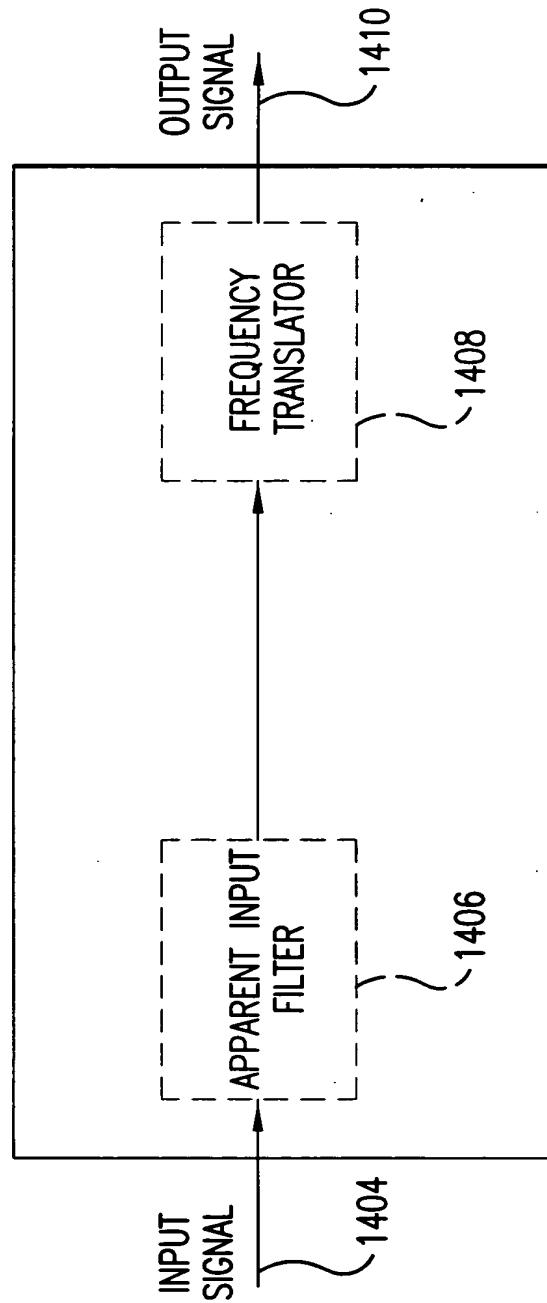


FIG. 14

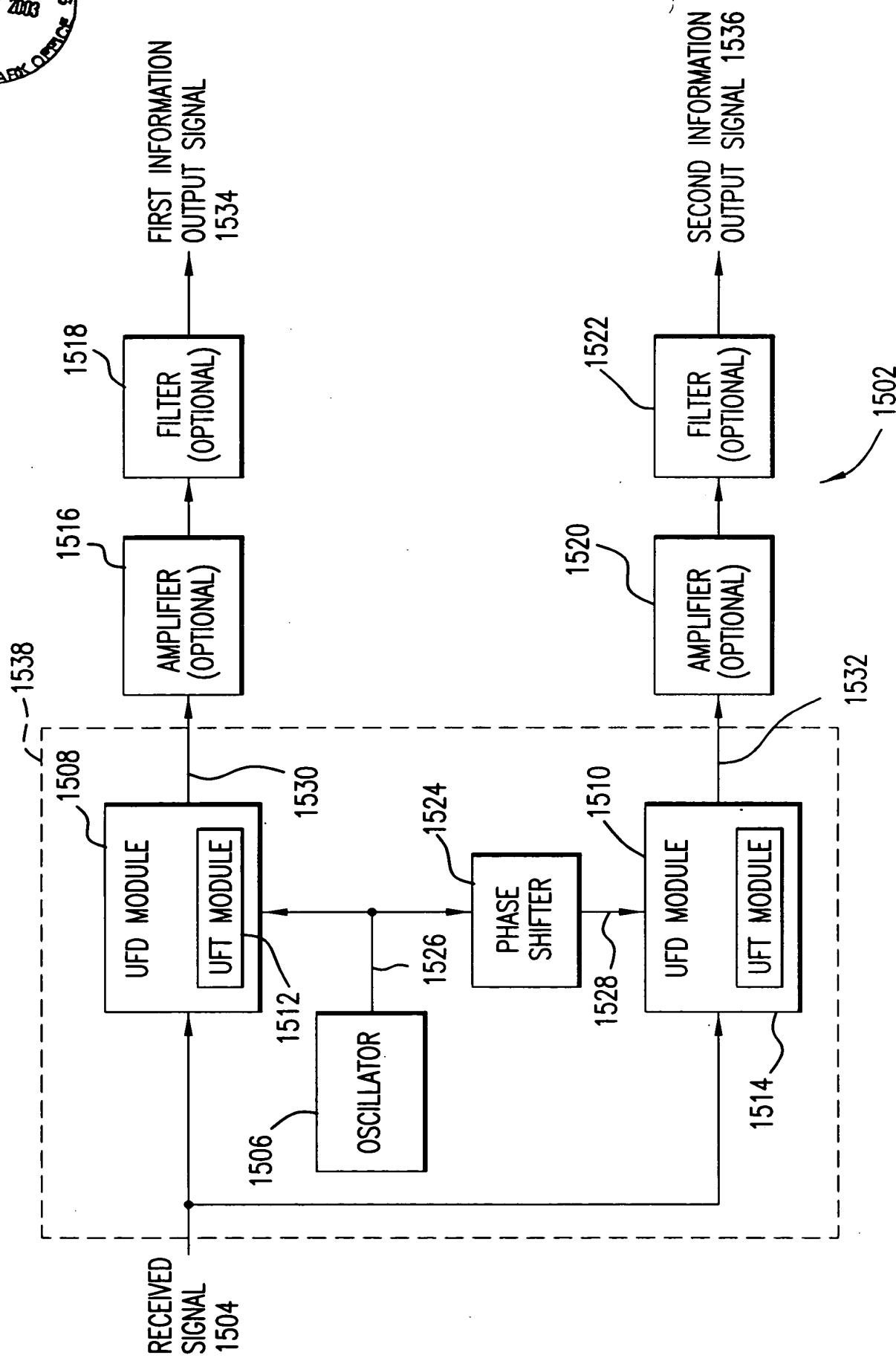


FIG. 15

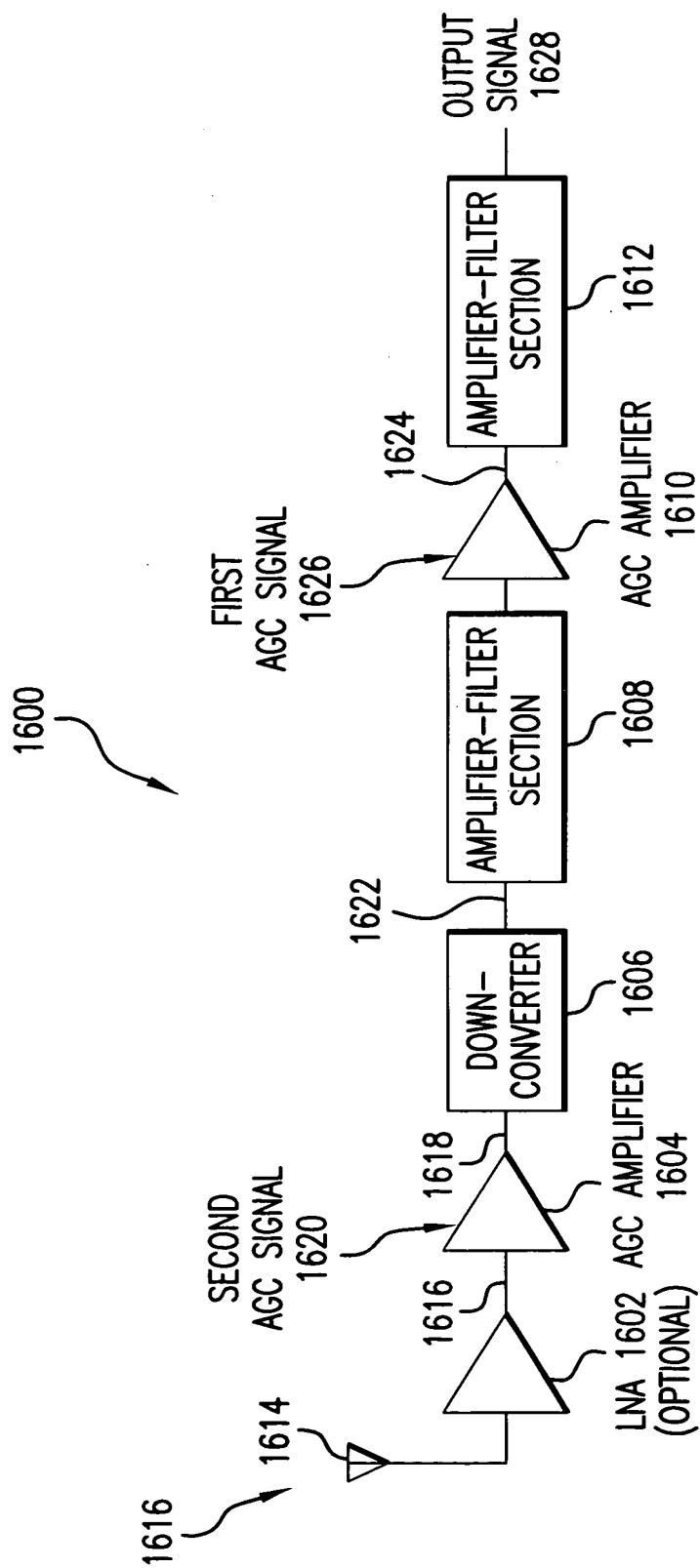


FIG. 16

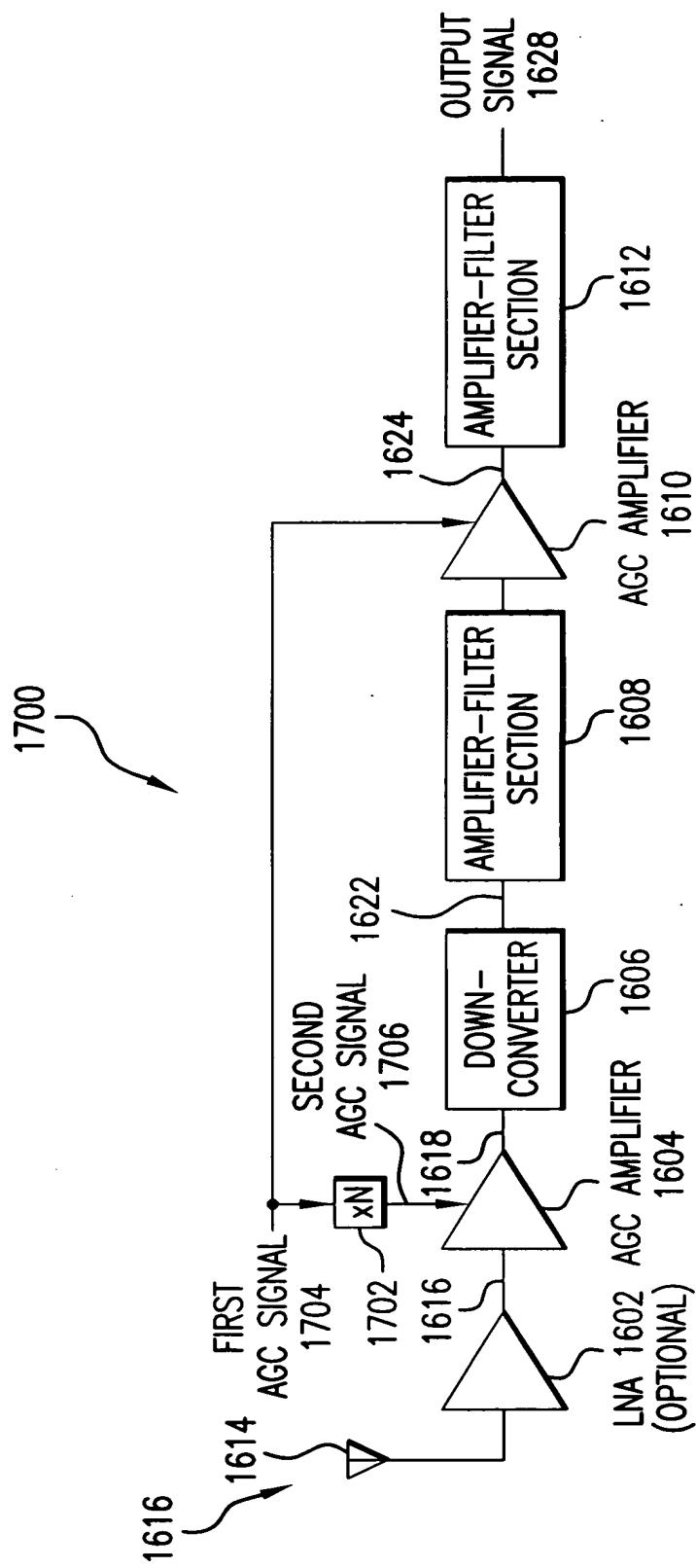


FIG. 17

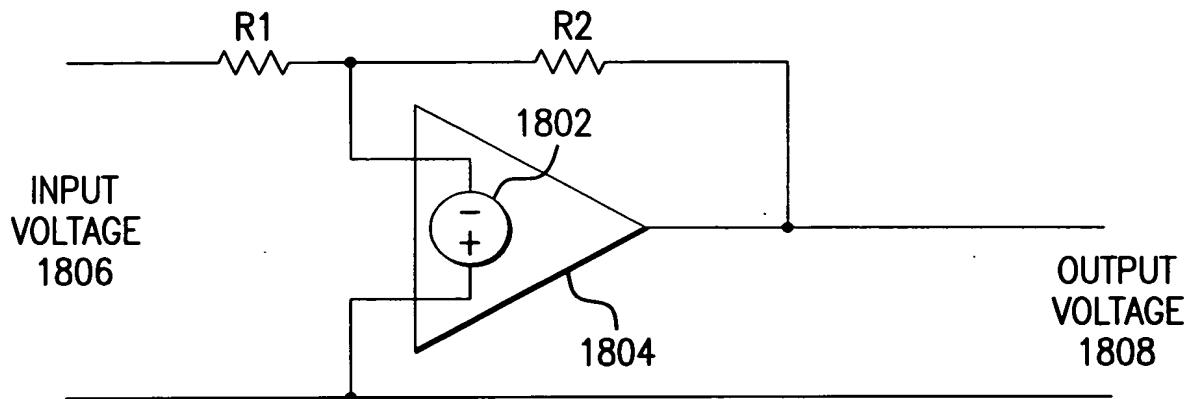


FIG. 18

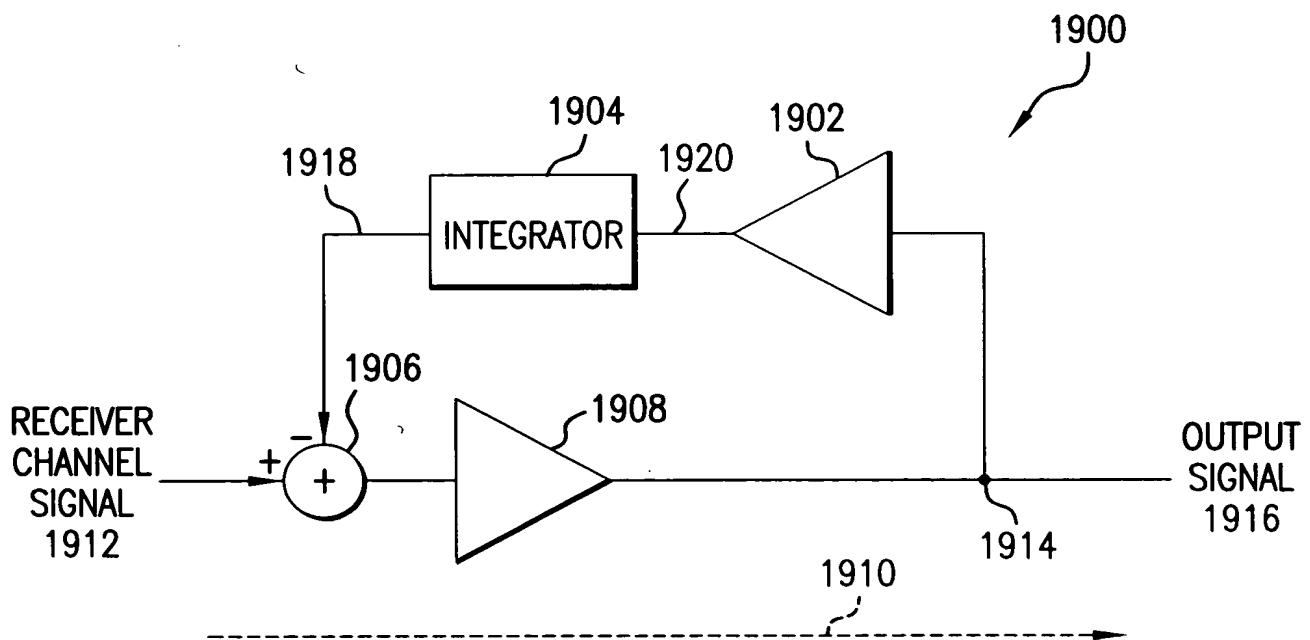


FIG. 19

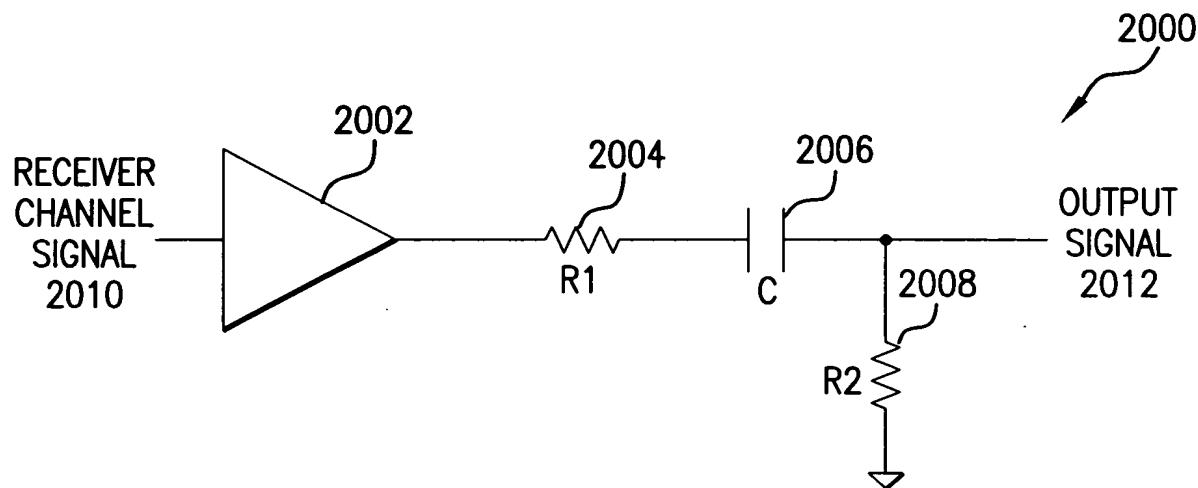


FIG. 20

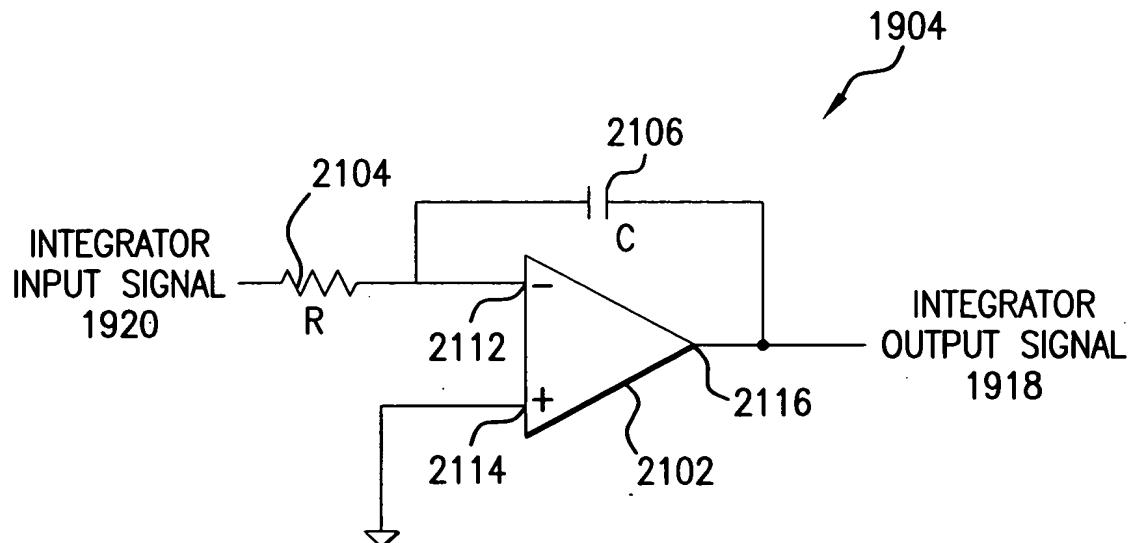


FIG. 21

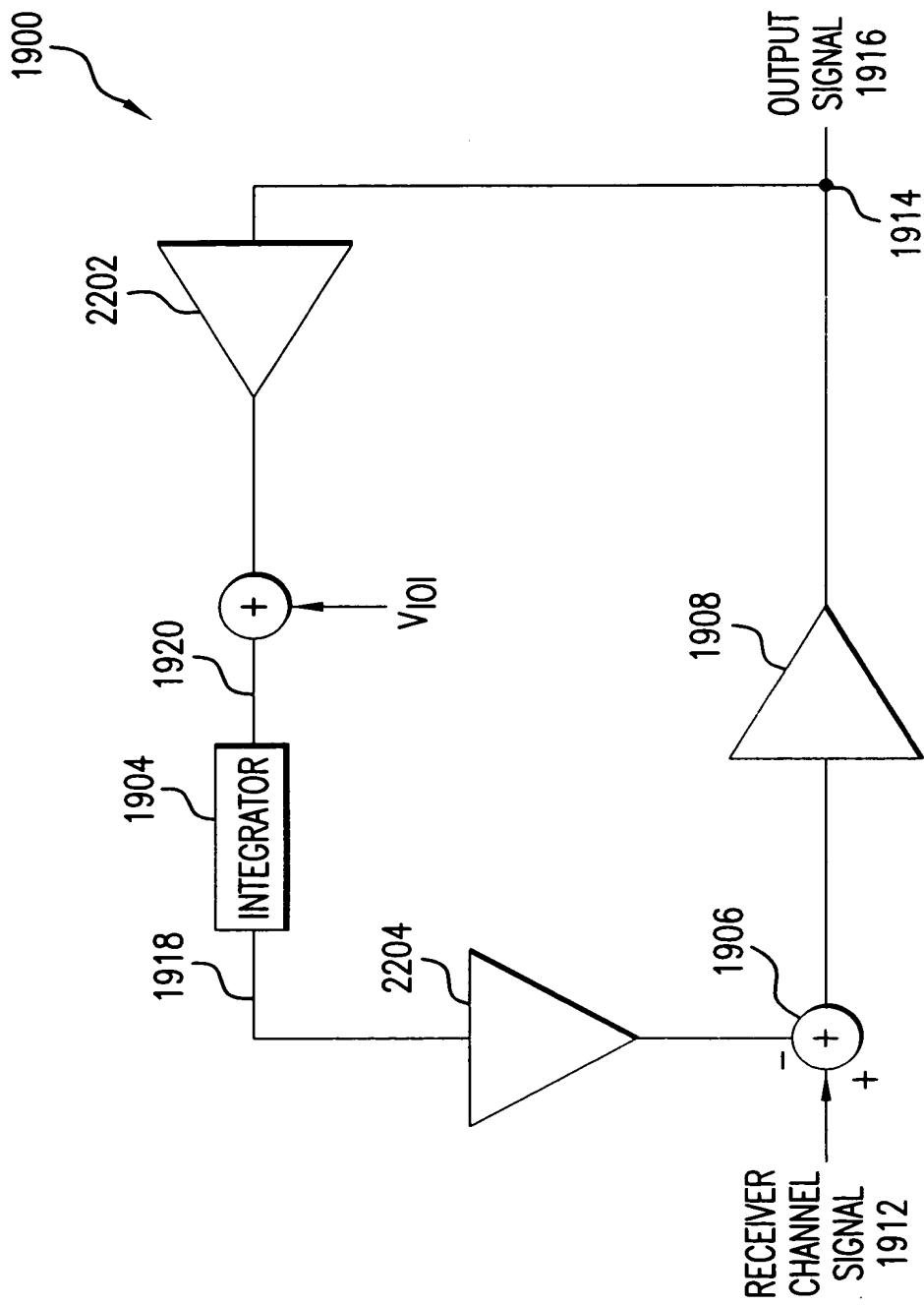


FIG. 22

O I P
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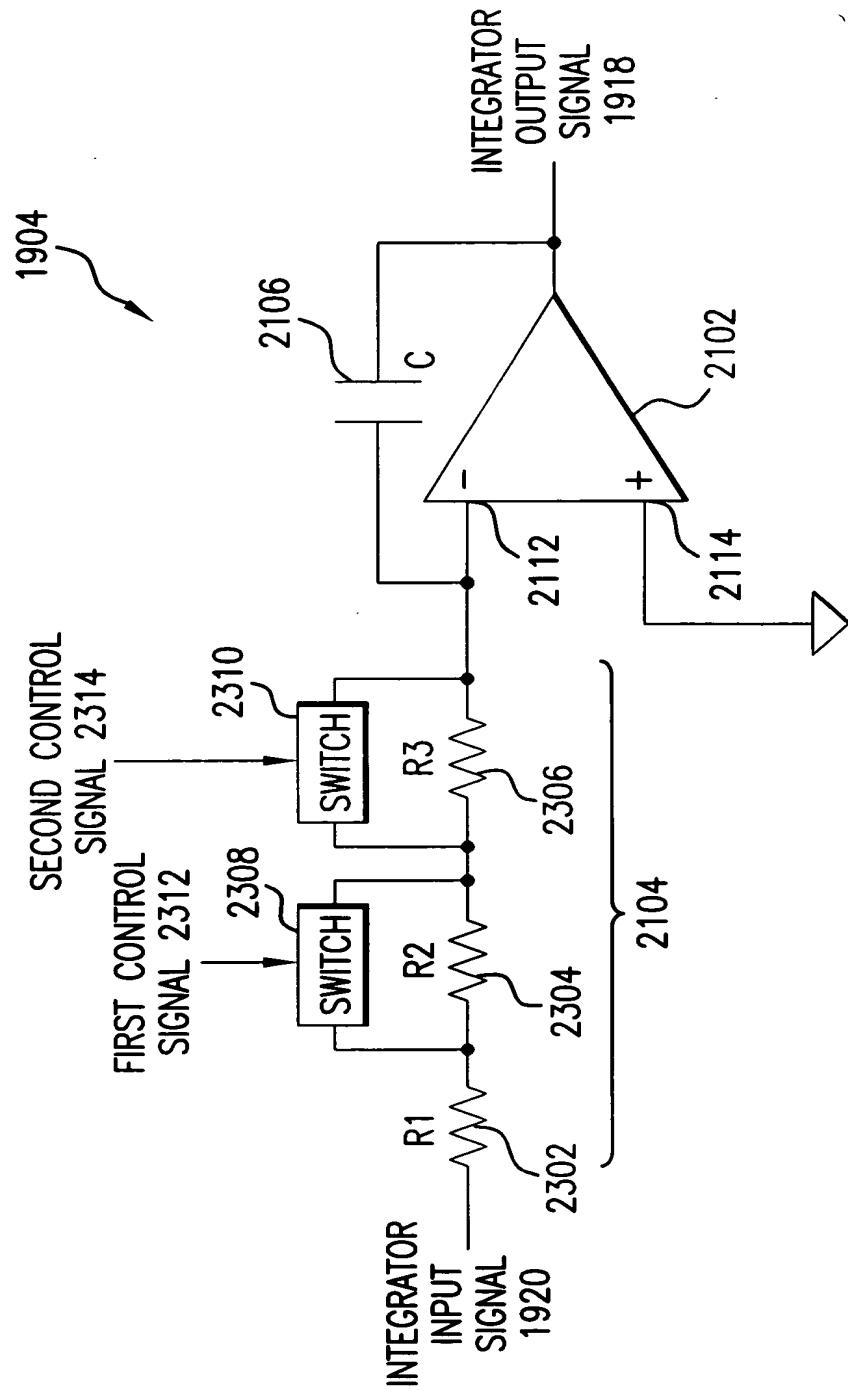


FIG. 23

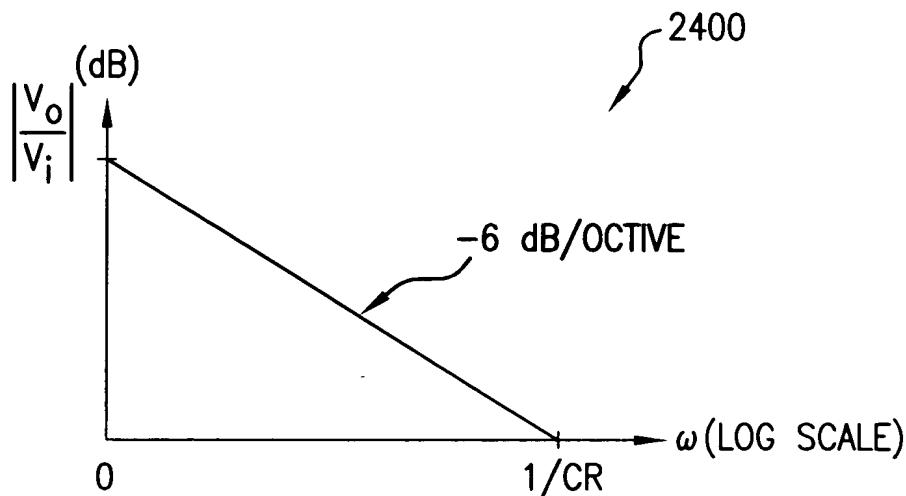


FIG. 24A

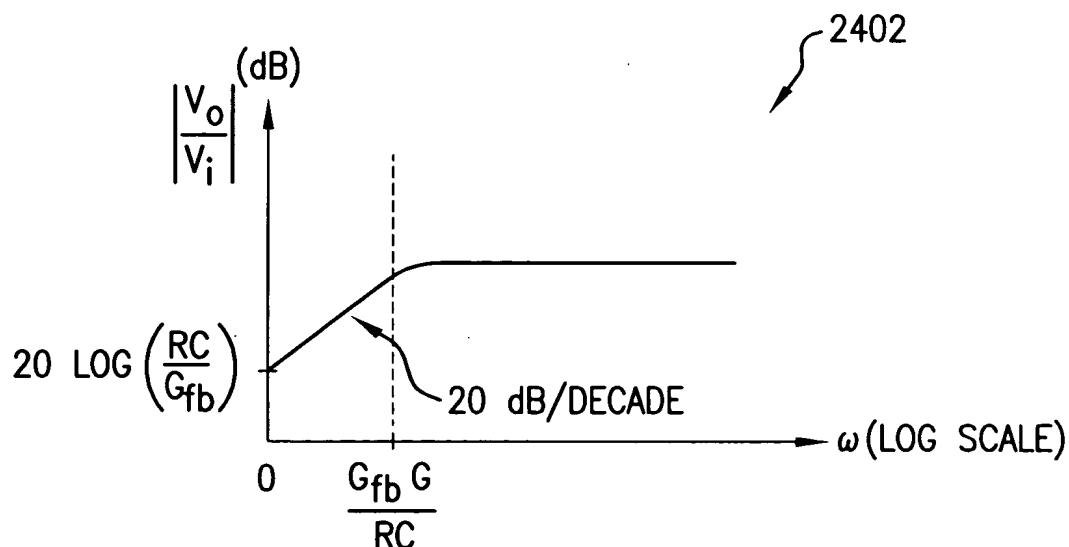


FIG. 24B

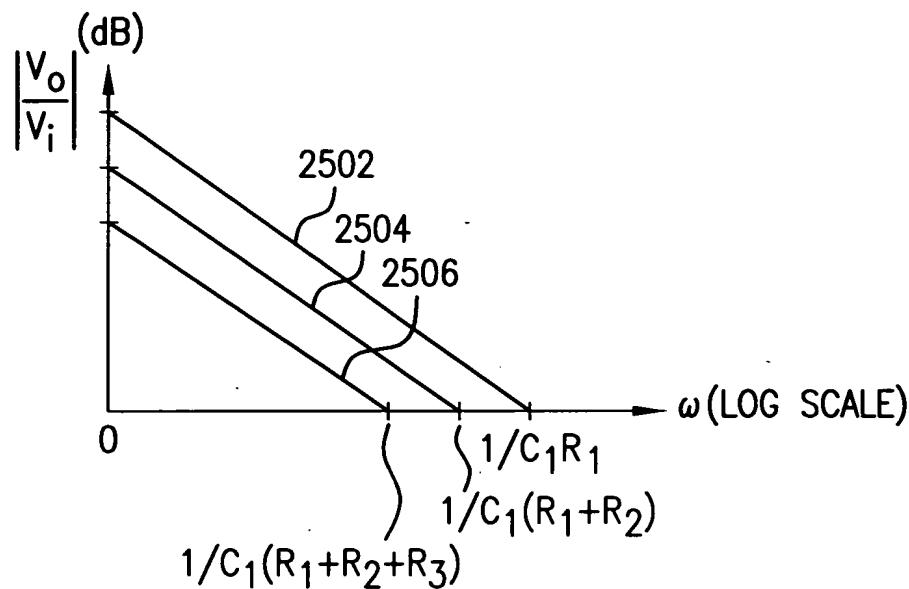


FIG. 25A

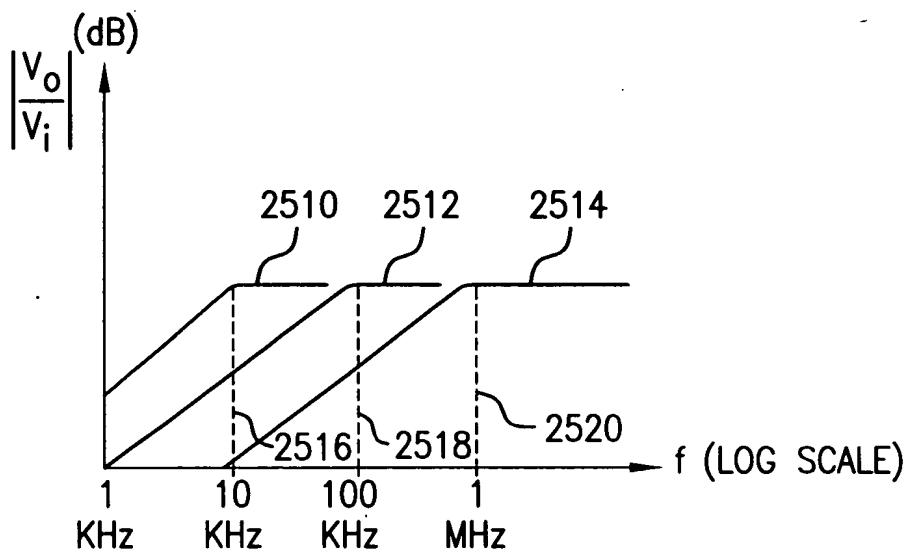


FIG. 25B



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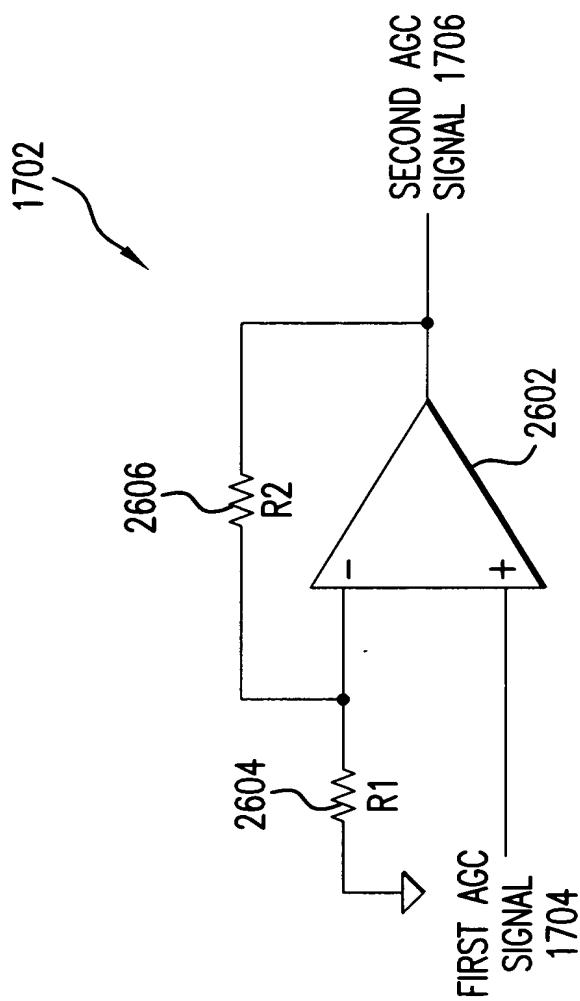


FIG. 26

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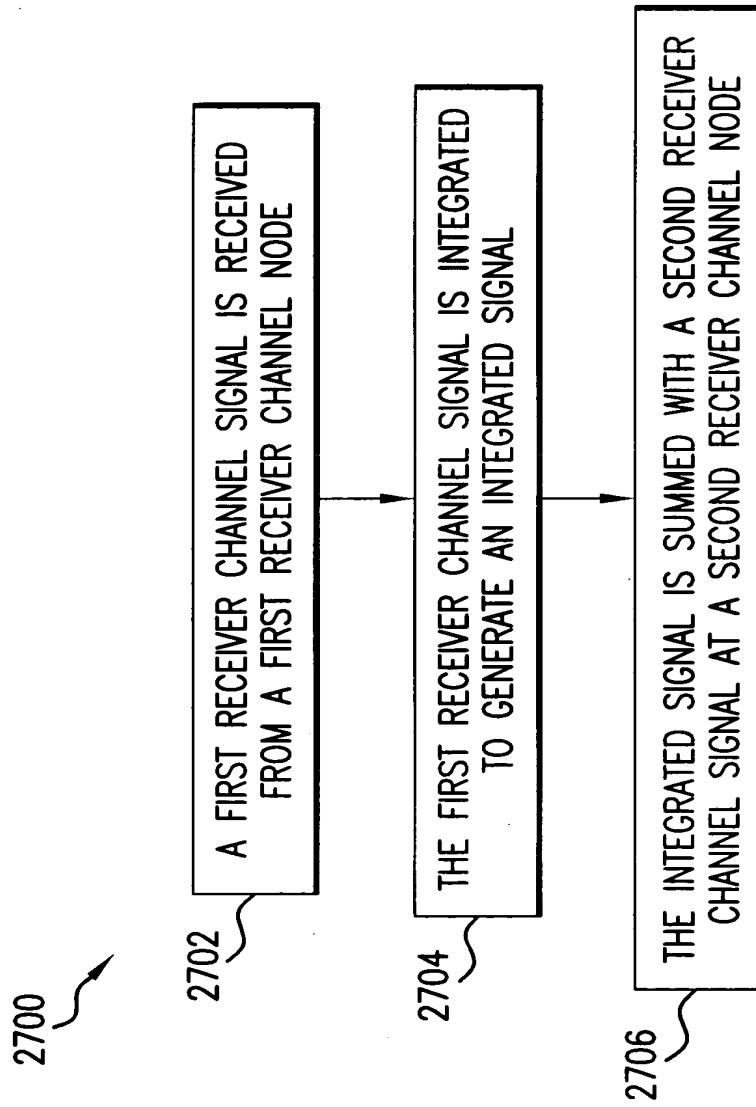


FIG. 27

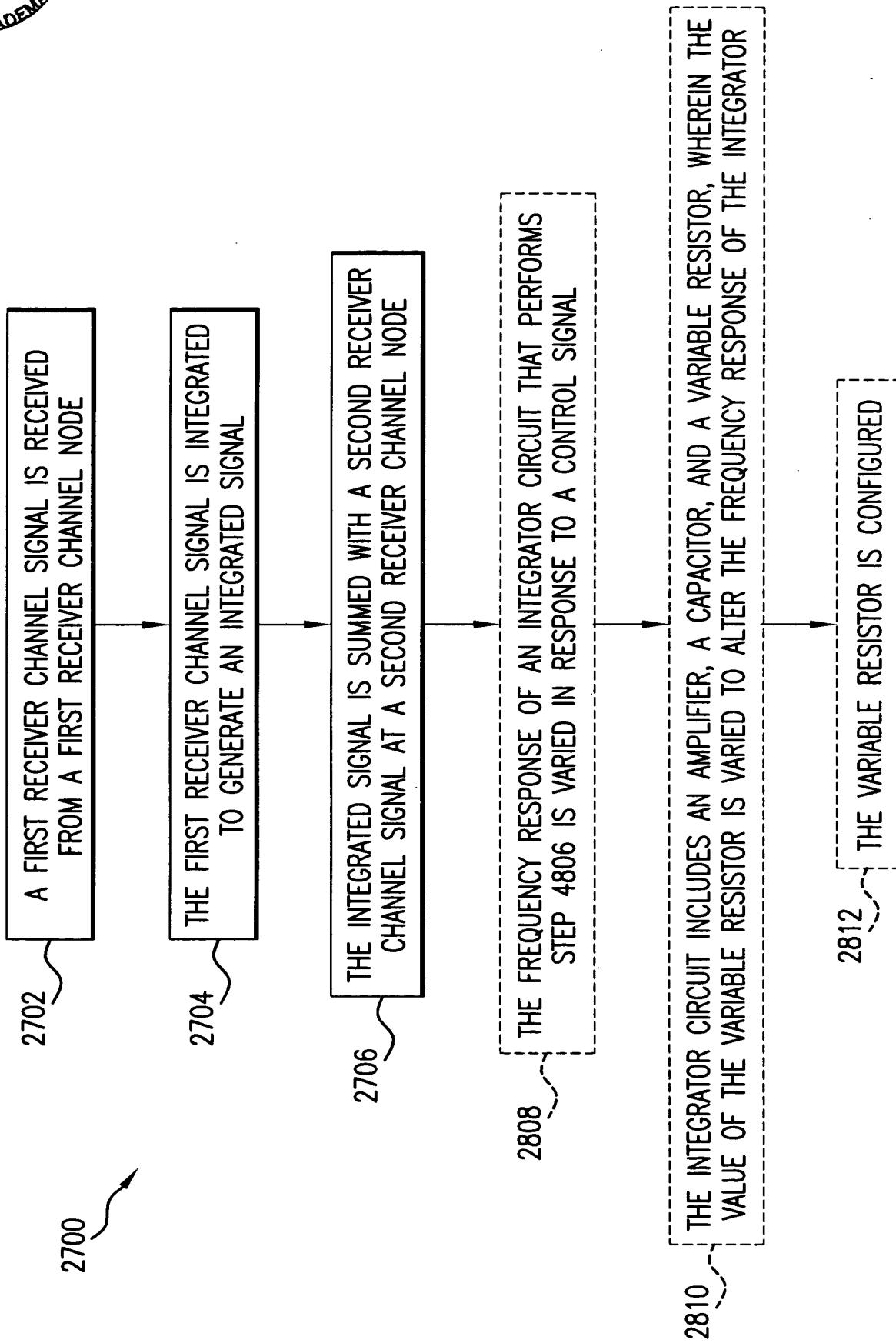


FIG. 28

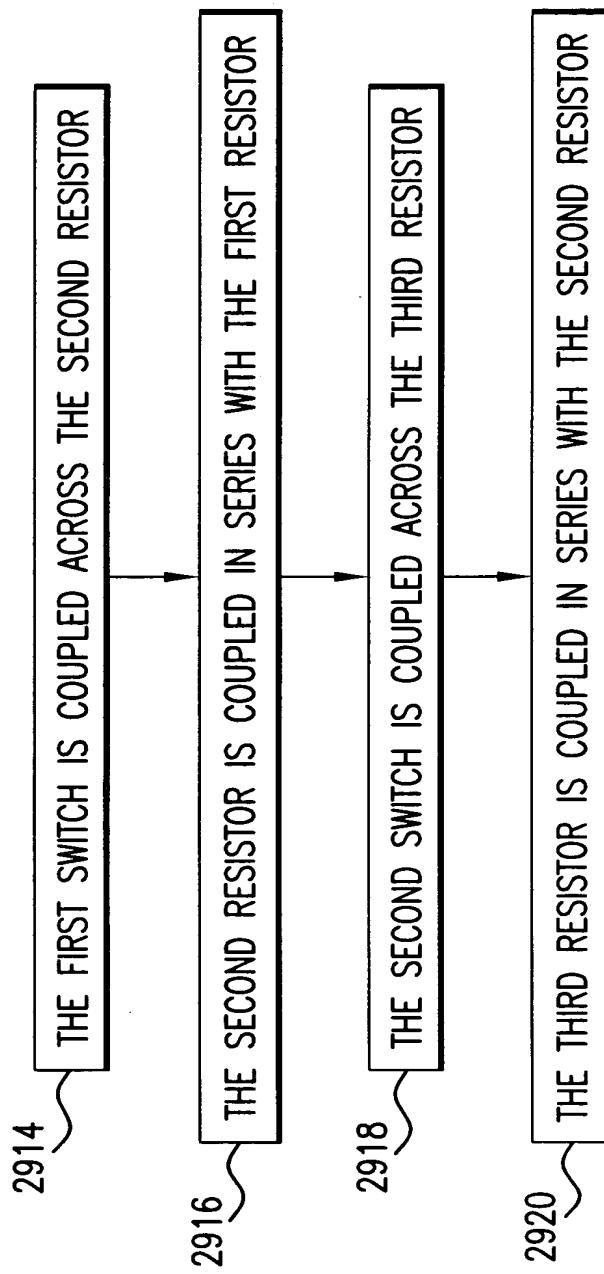


FIG. 29



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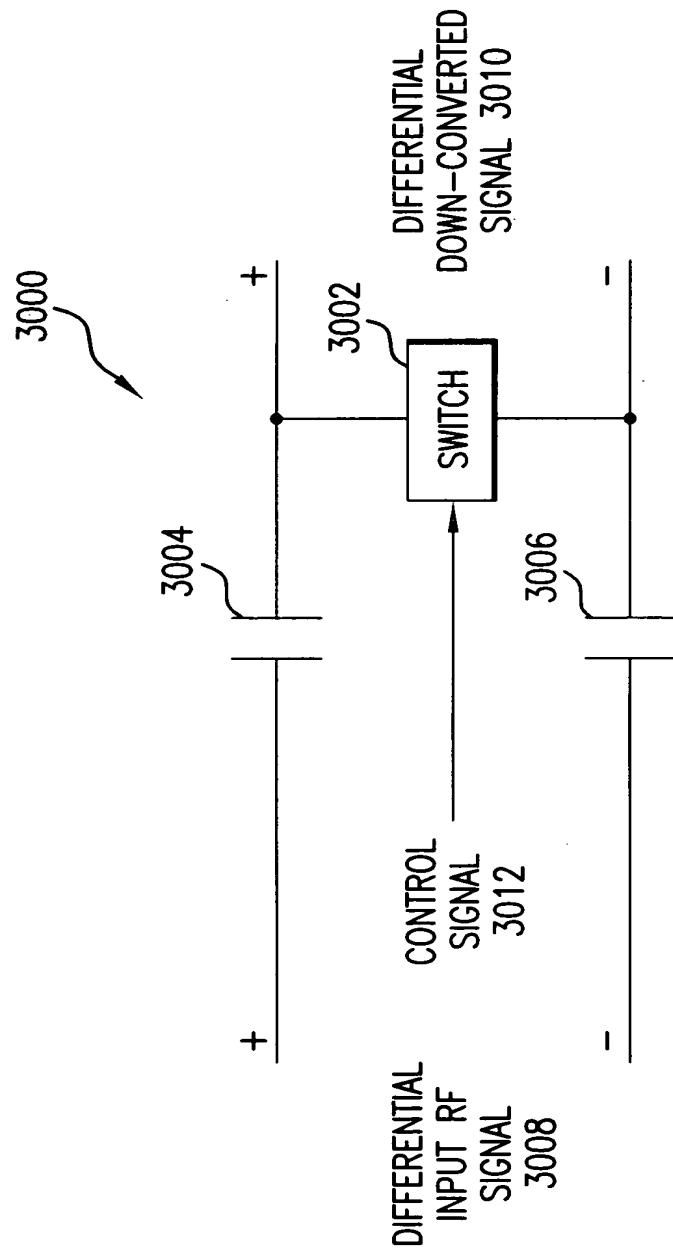


FIG. 30

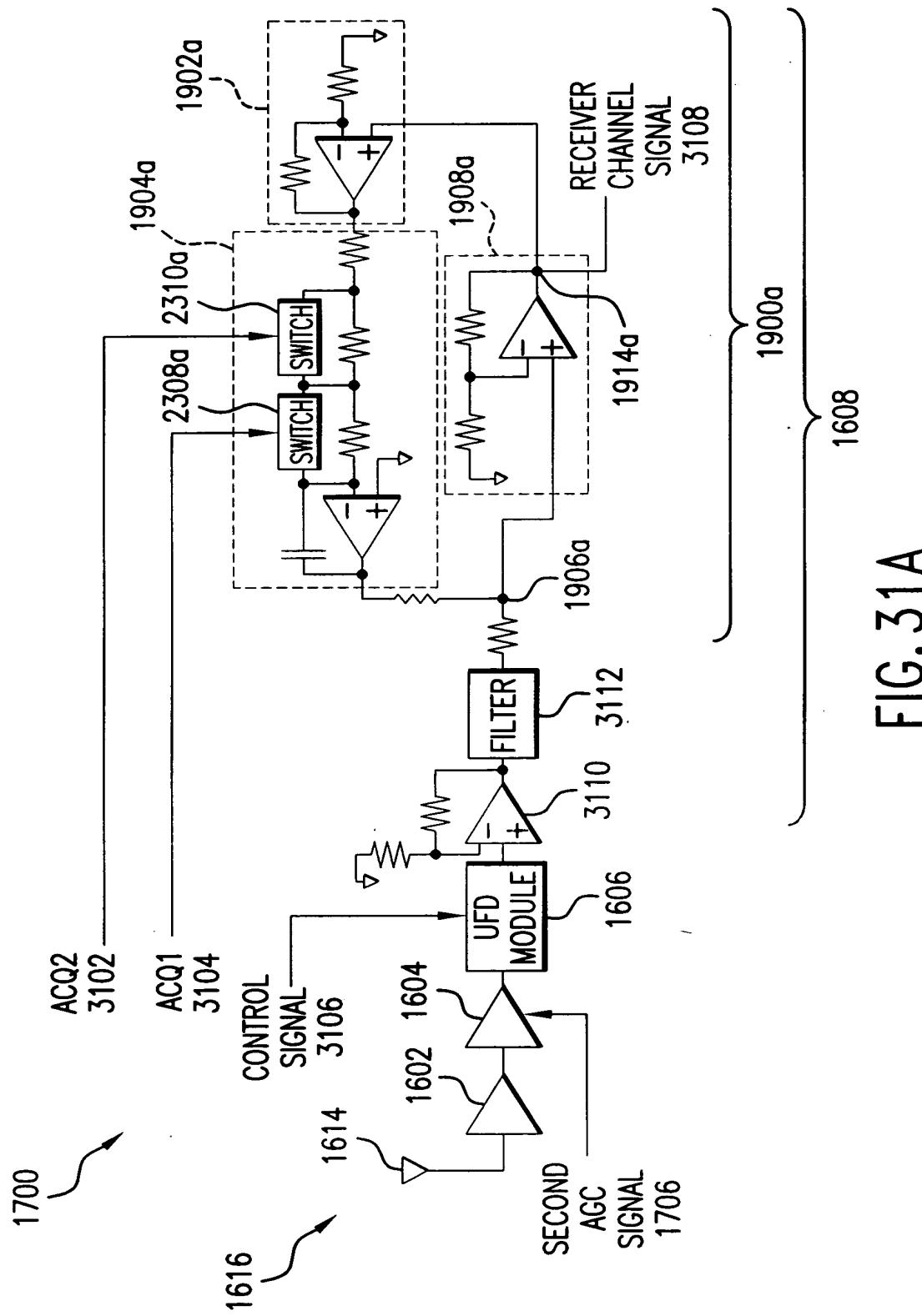


FIG. 31A

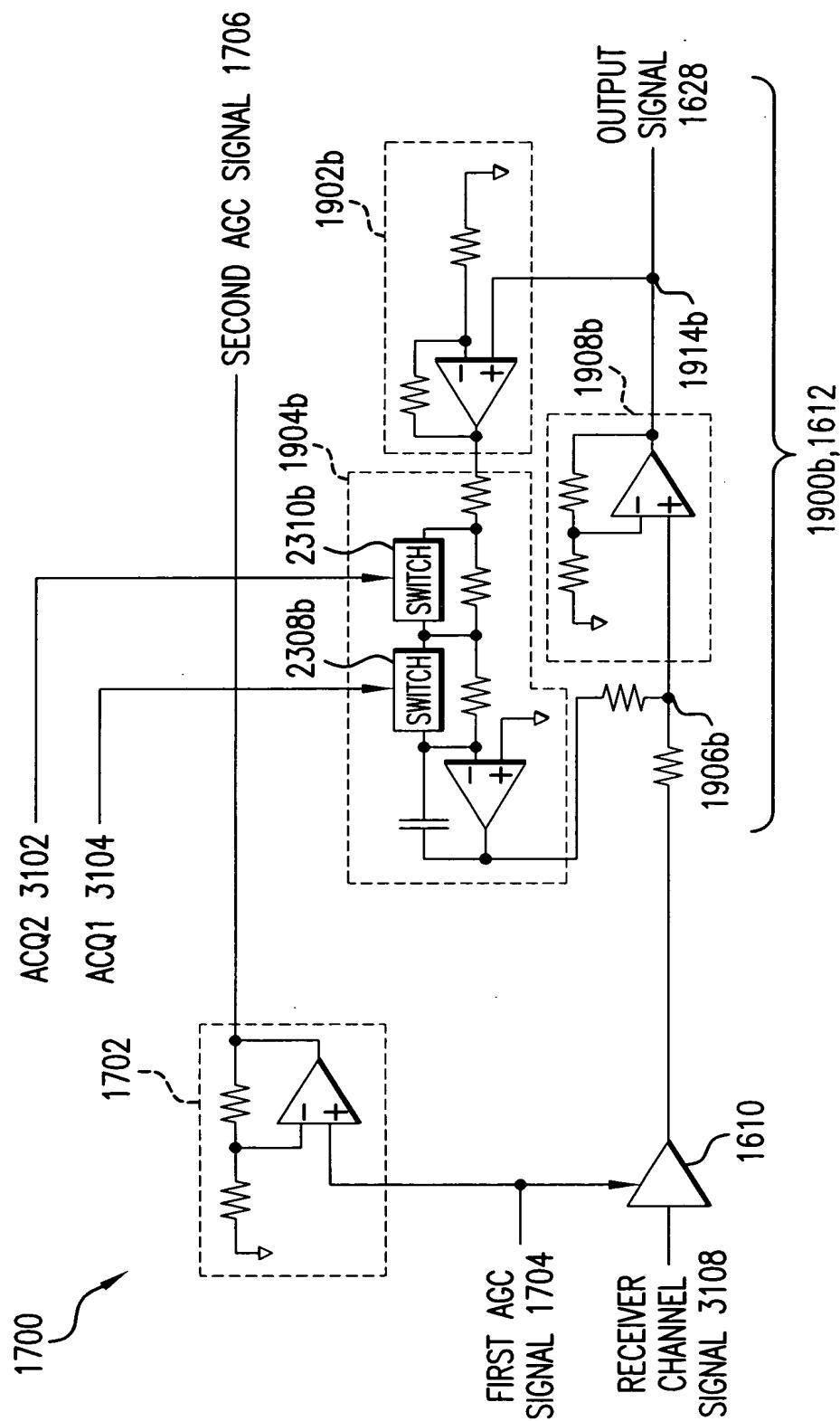


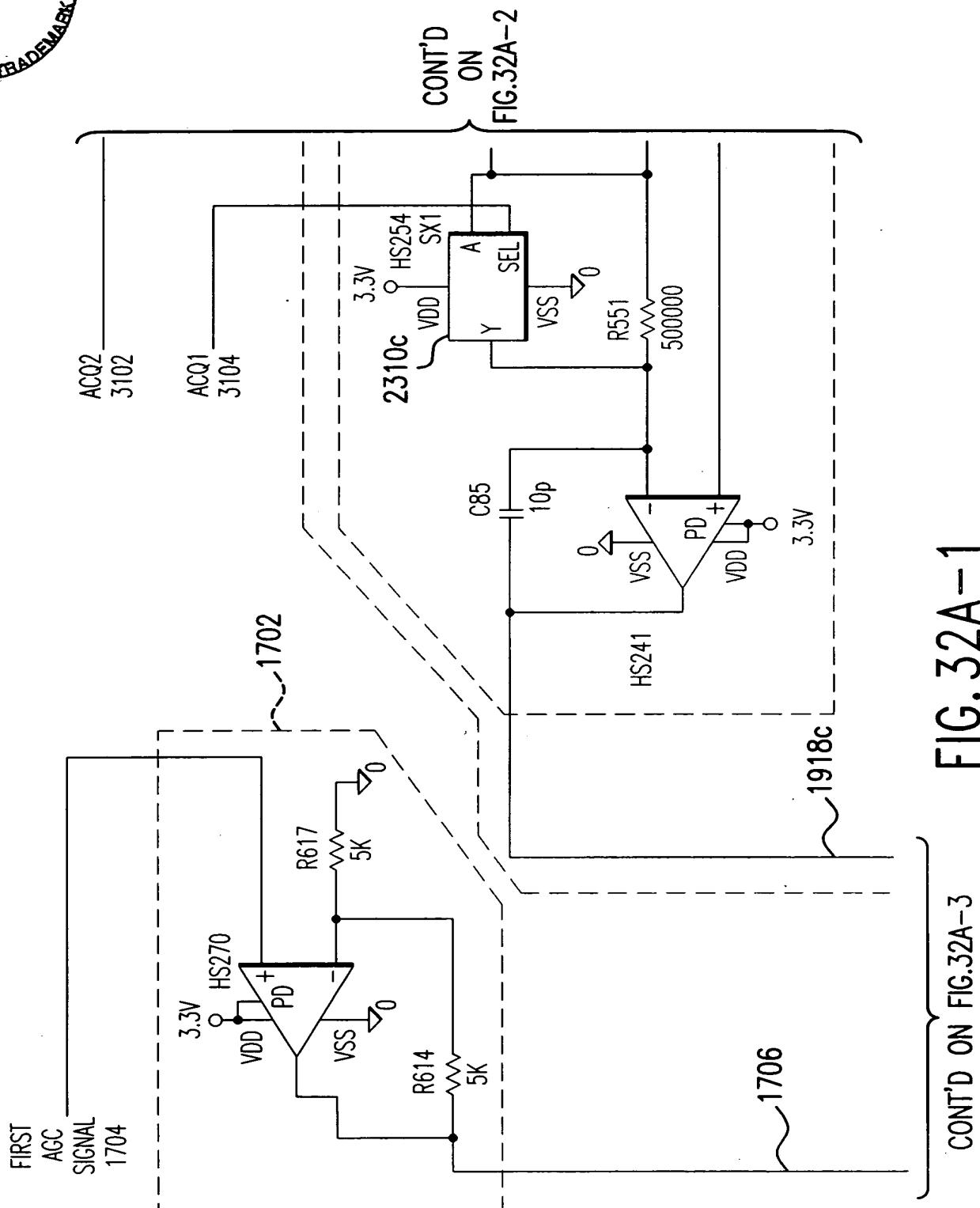
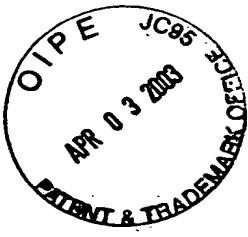
FIG. 31B

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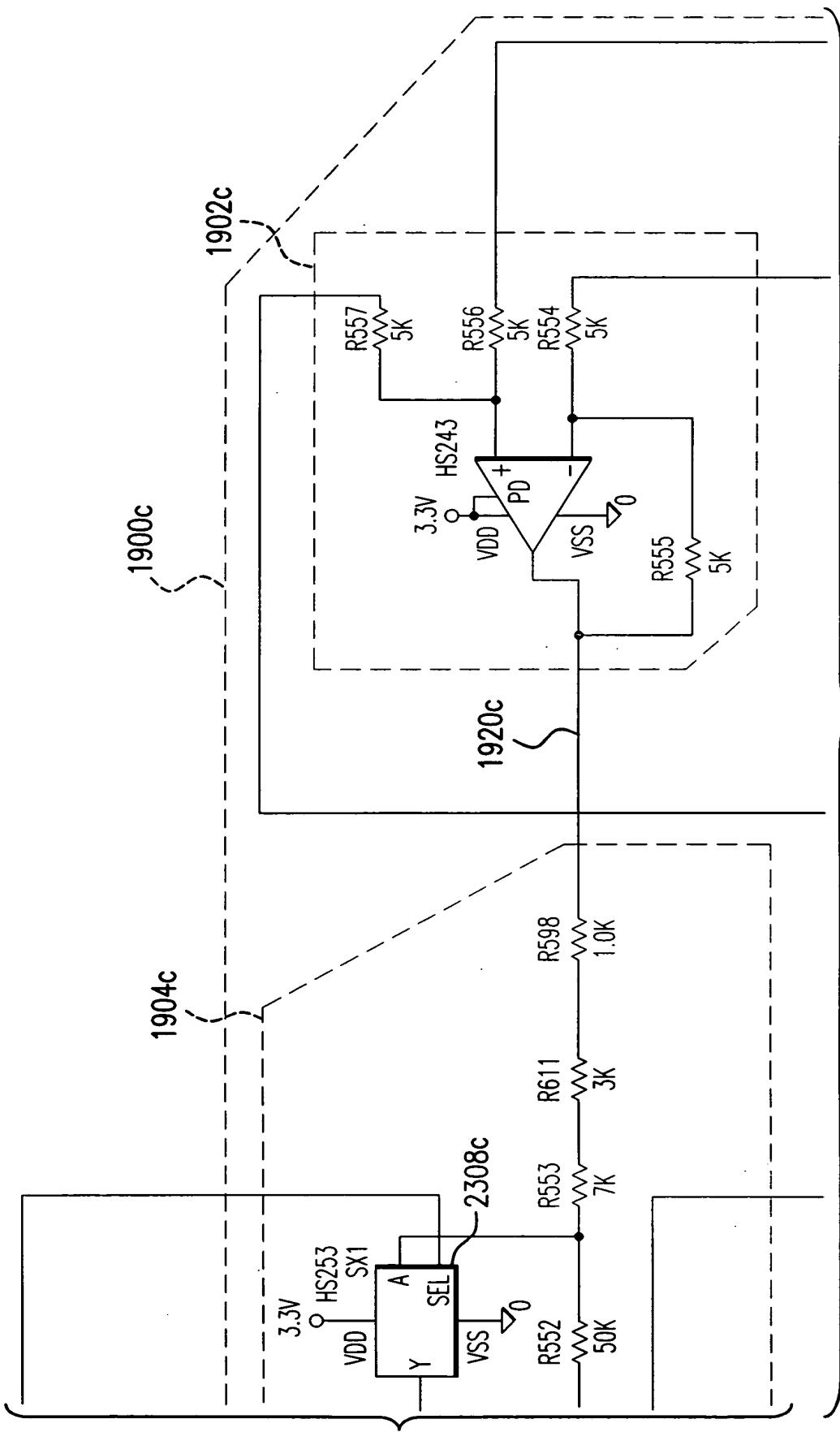
FIG.32A-1	FIG.32A-2
FIG.32A-3	FIG.32A-4

FIG.32A



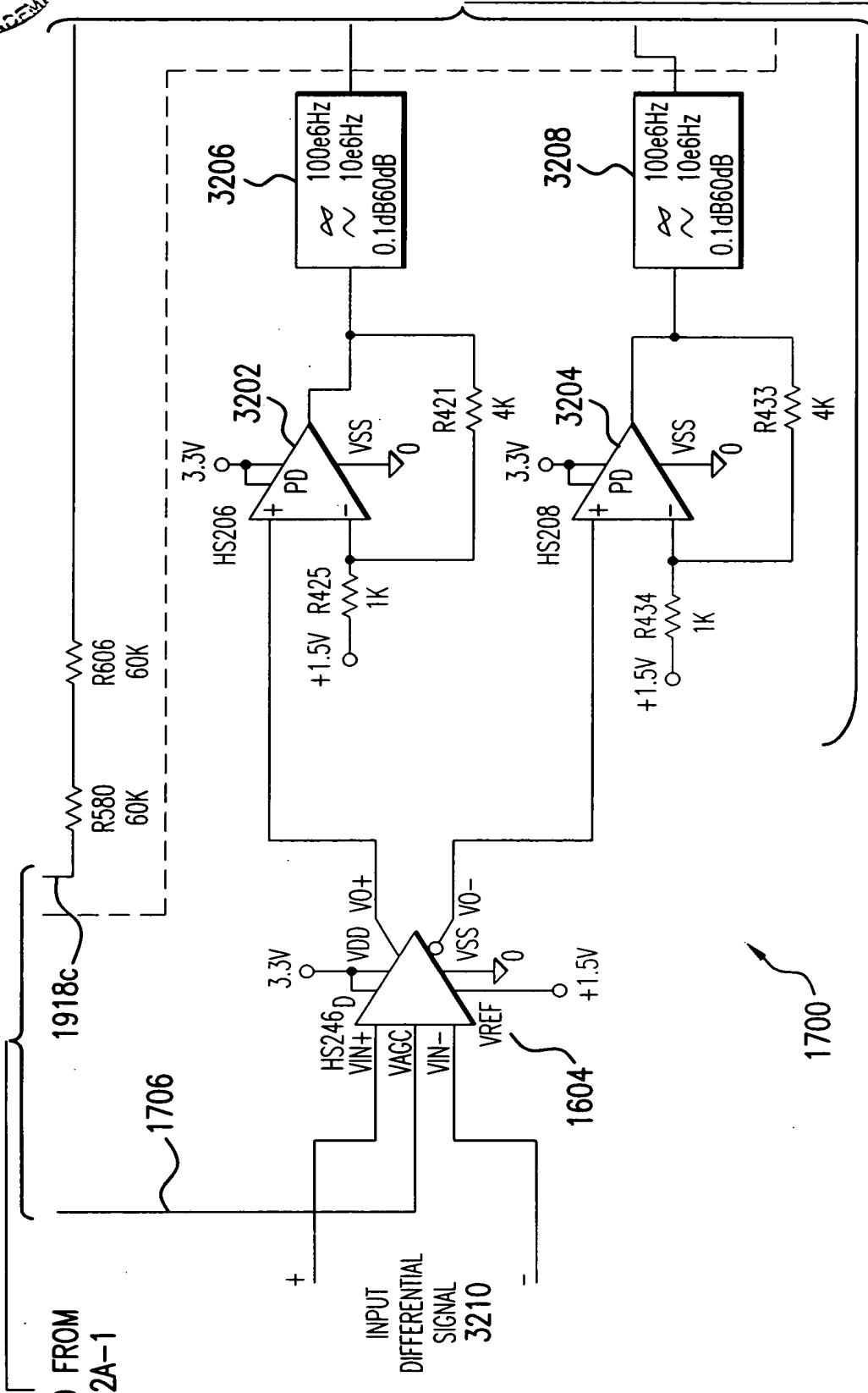


CONT'D FROM
FIG.32A-1



CONT'D ON
FIG.32A-4

FIG. 32A-2



CONT'D ON FIG.32A-4

FIG. 32A-3



CONT'D FROM FIG.32A-2

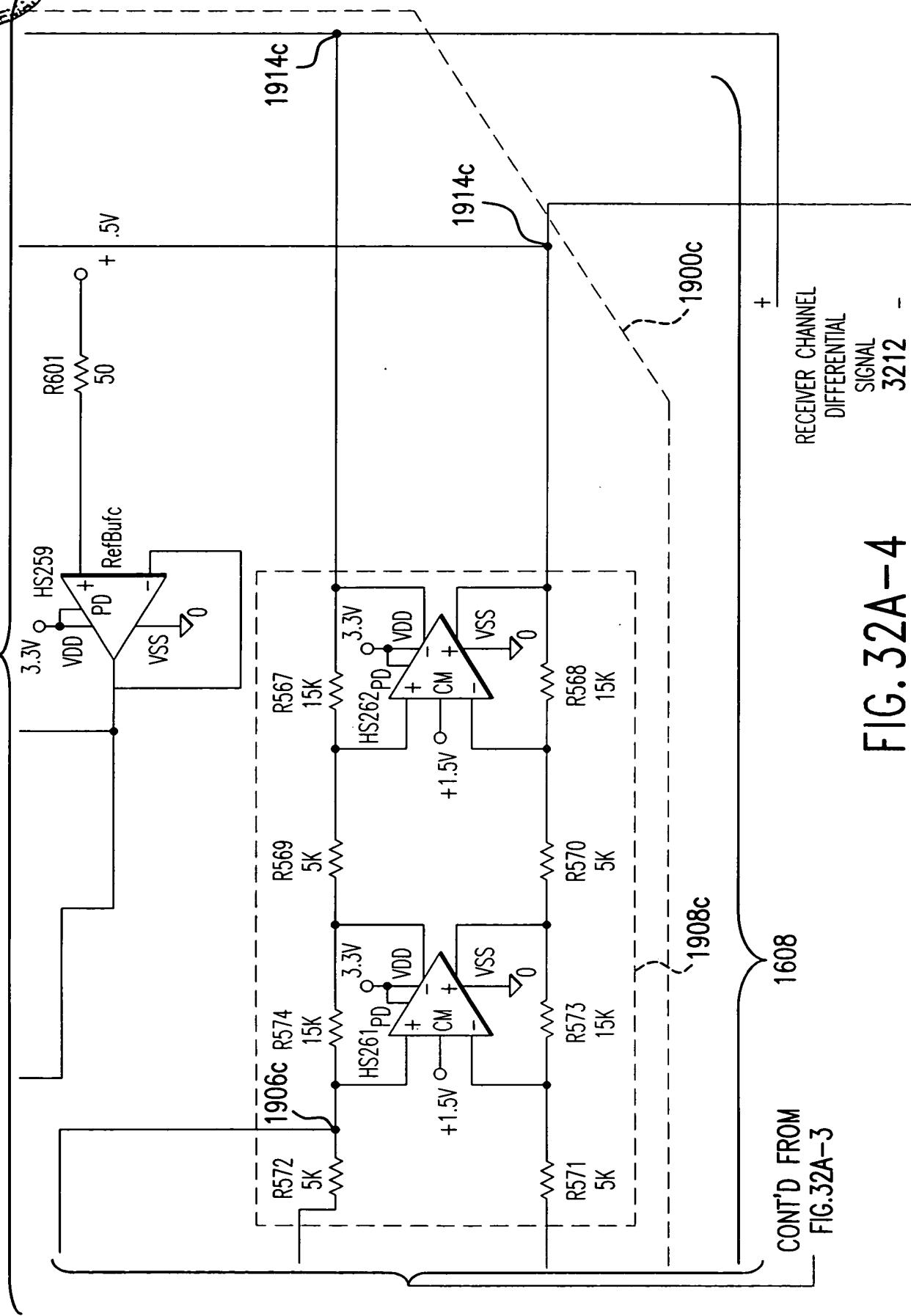


FIG. 32A-4

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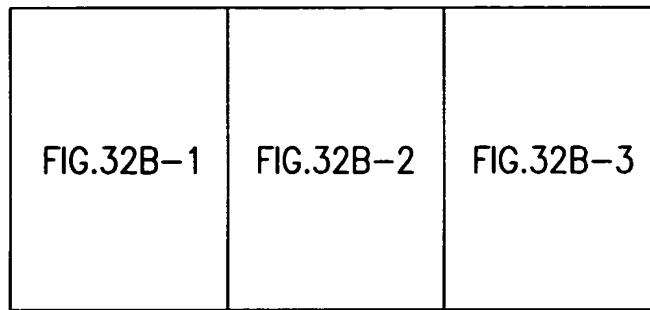


FIG. 32B



CONT'D
ON
FIG.32B-2

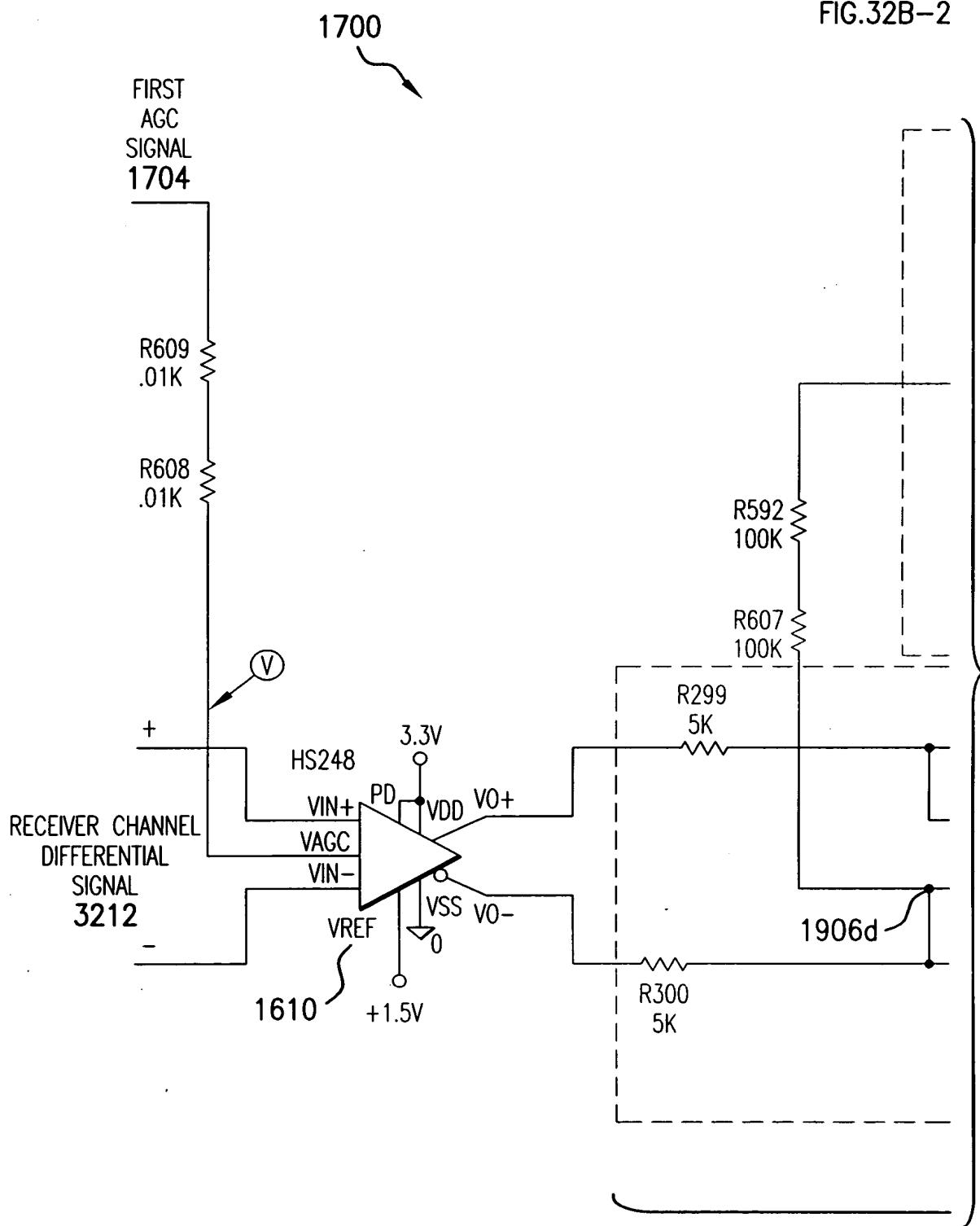


FIG. 32B-1

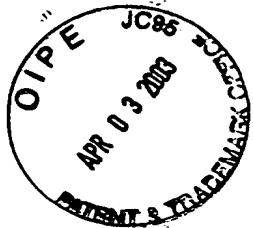
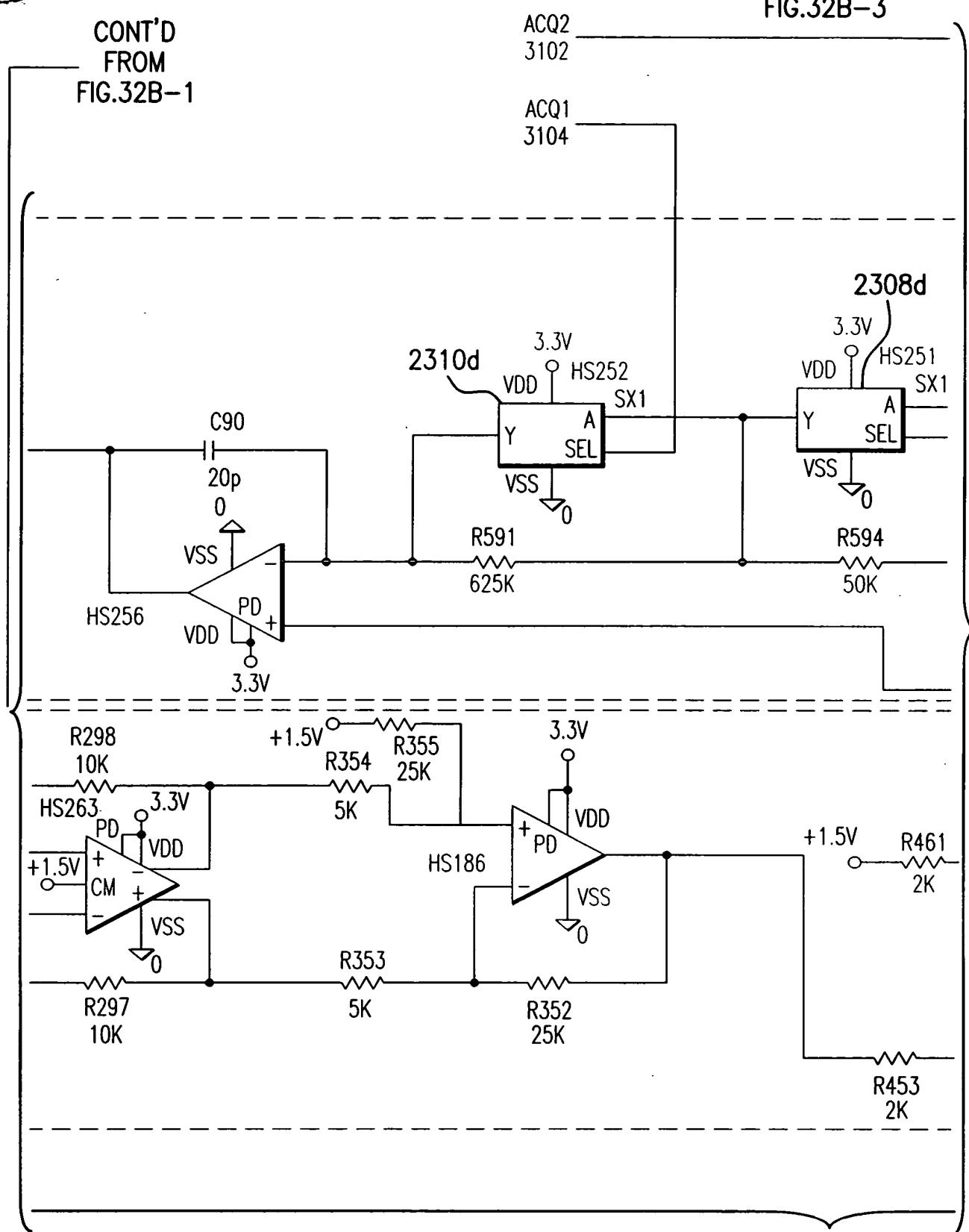
CONT'D ON
FIG.32B-3CONT'D
FROM
FIG.32B-1

FIG. 32B-2

1900d, 1612



CONT'D
FROM
FIG.32B-2

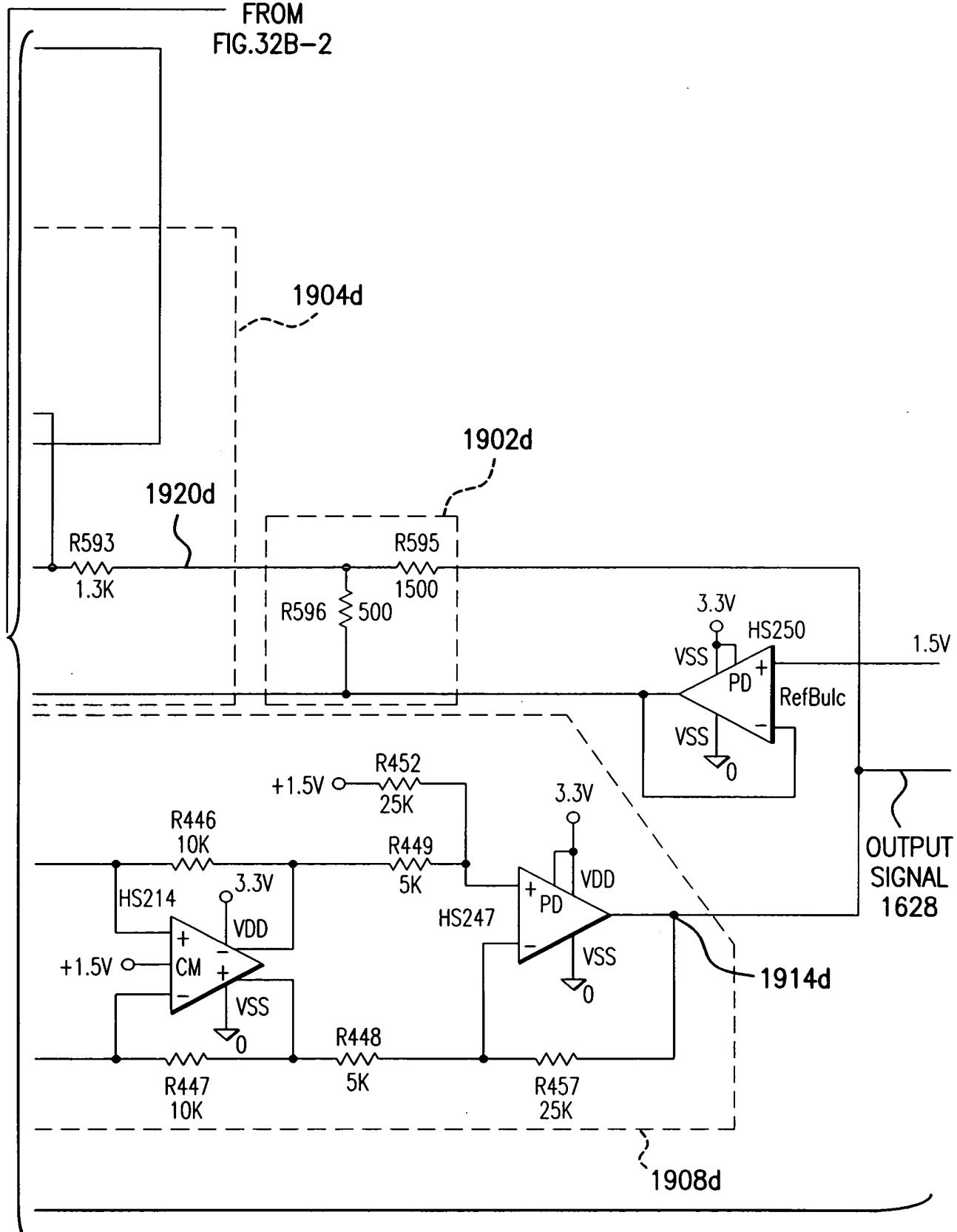


FIG. 32B-3

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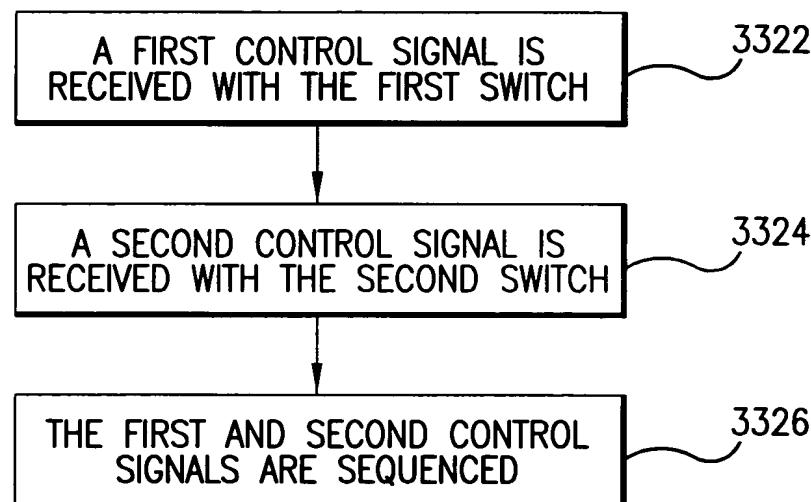


FIG. 33

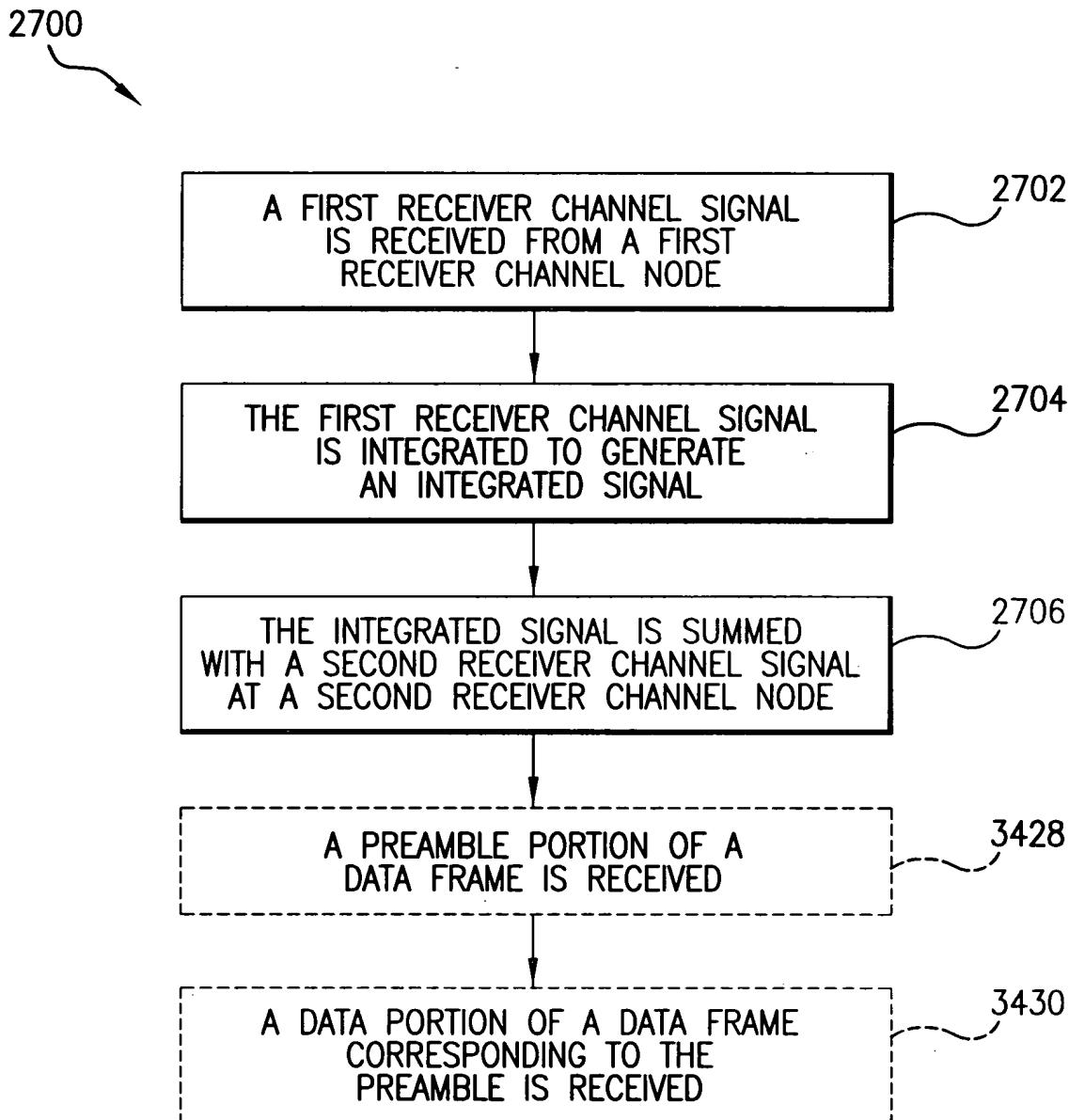


FIG. 34

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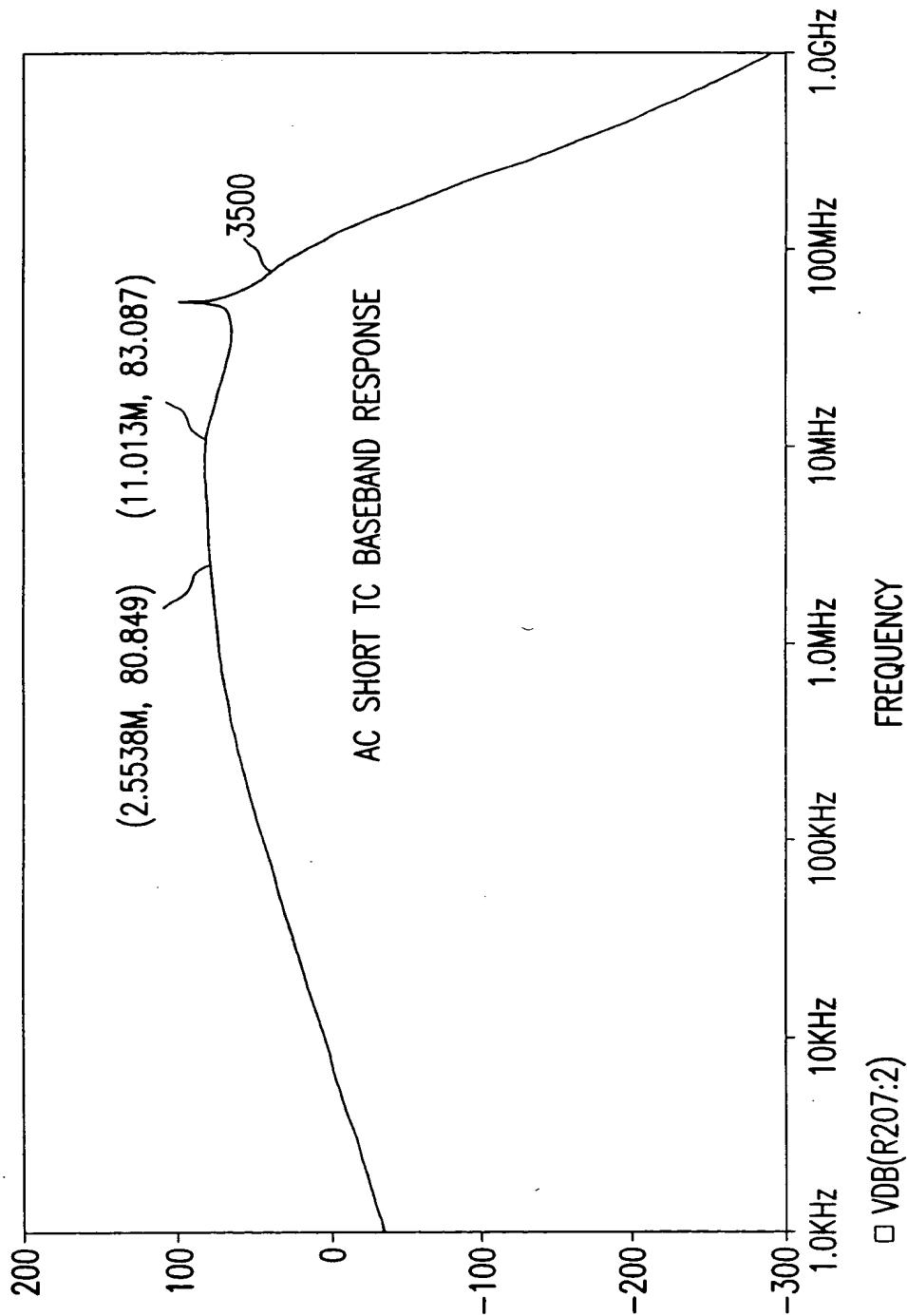
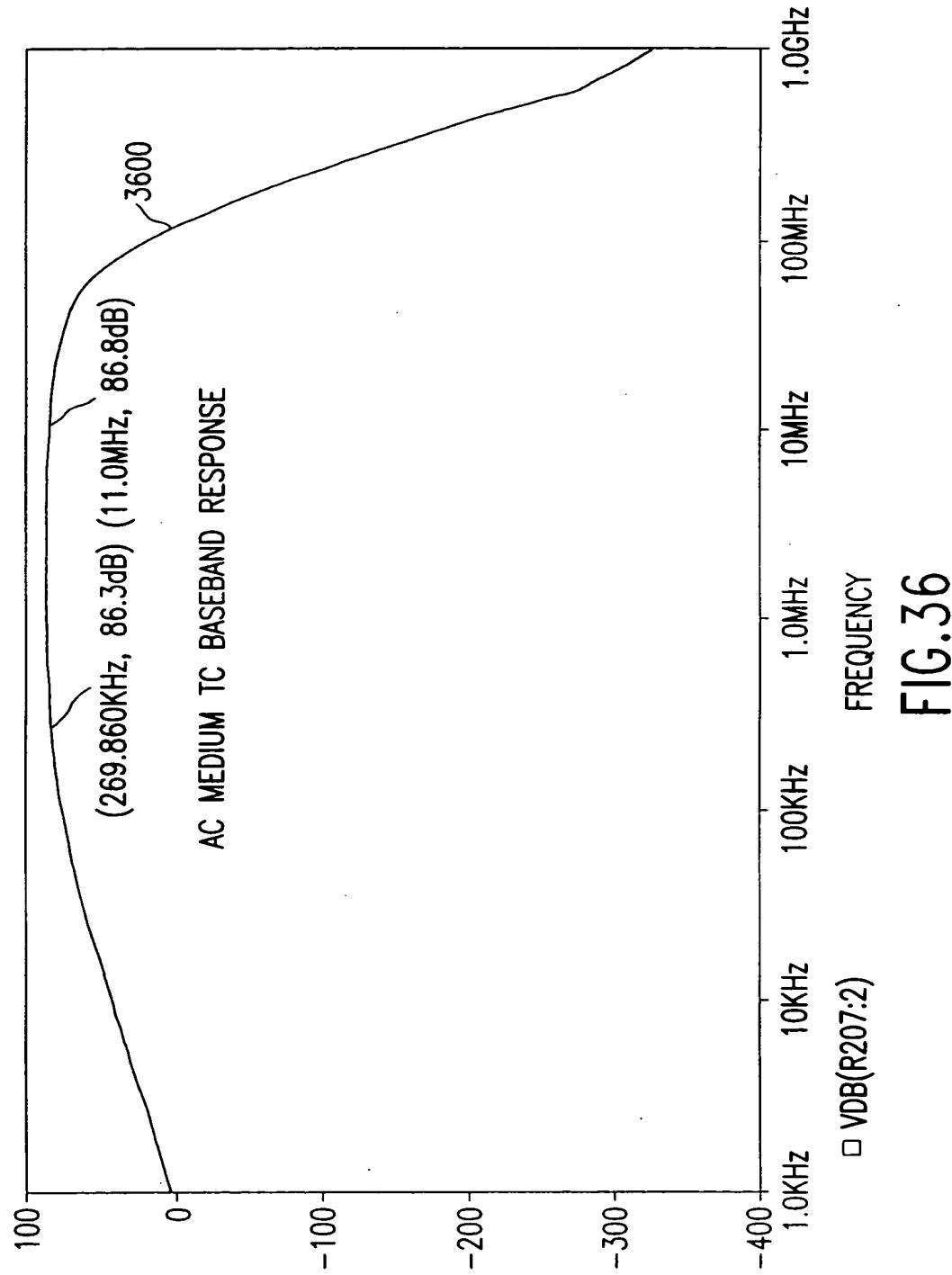


FIG. 35

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Title: Method and Apparatus for Reducing DC Offsets
In a Communication System



Appl. No. 09/986,764; Filed: November 9, 2001
Dkt. No. 1744.1330000; Group Art Unit: 2631
Inventors: Rawlins *et al.*; Tel: 202/371-2600
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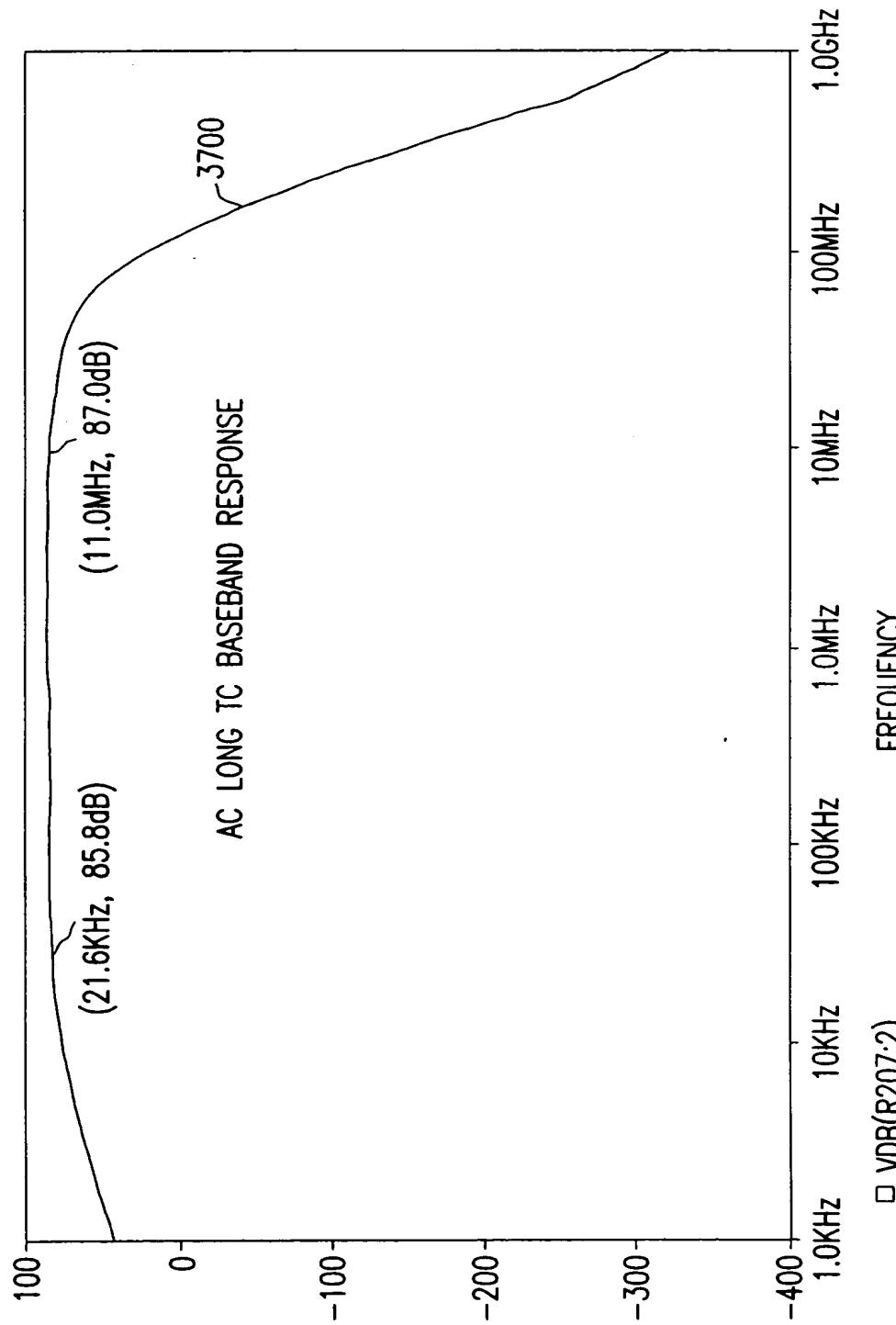
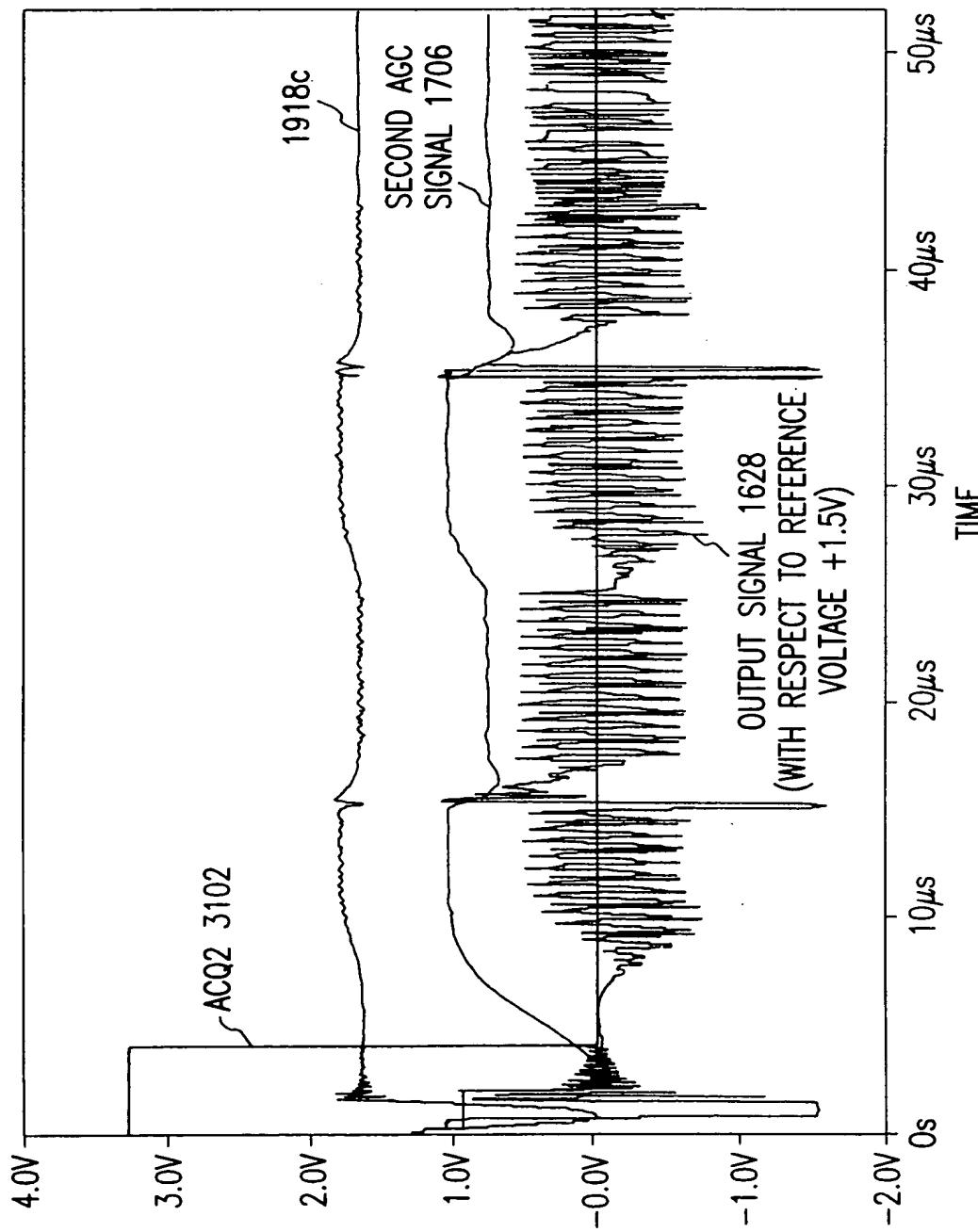


FIG. 37



FIG. 38



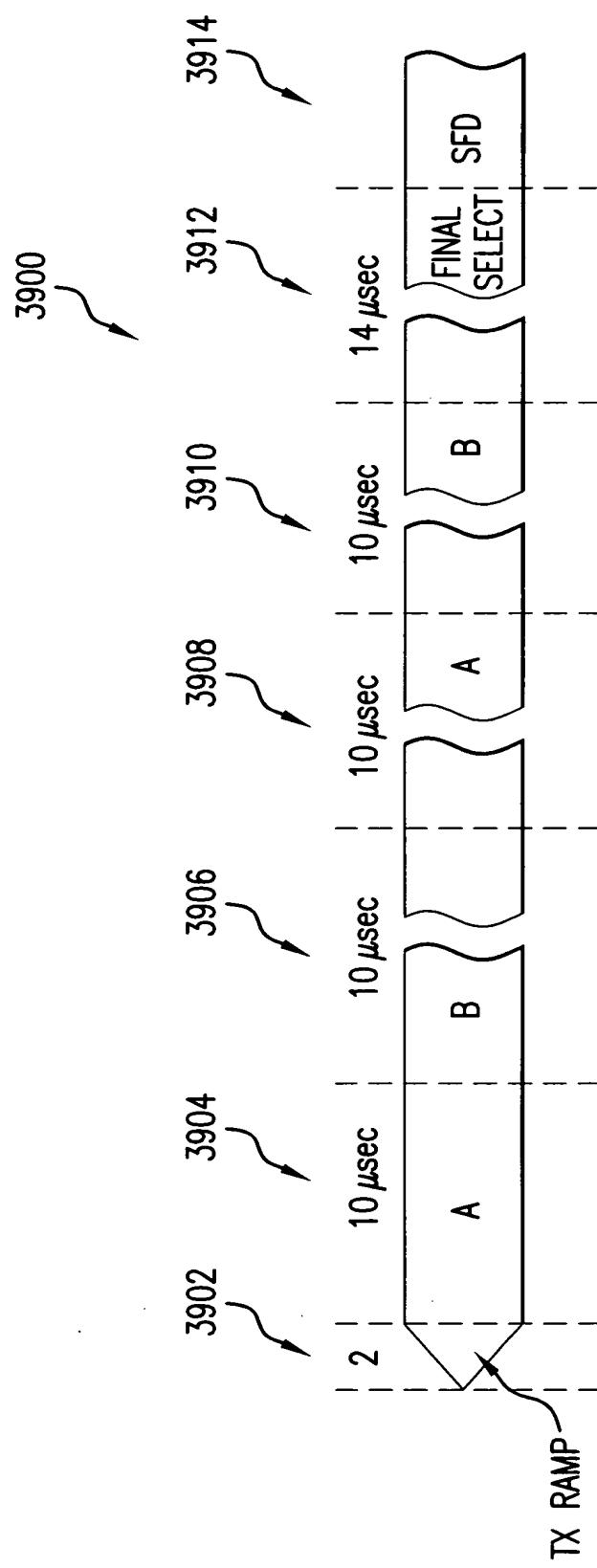


FIG. 39

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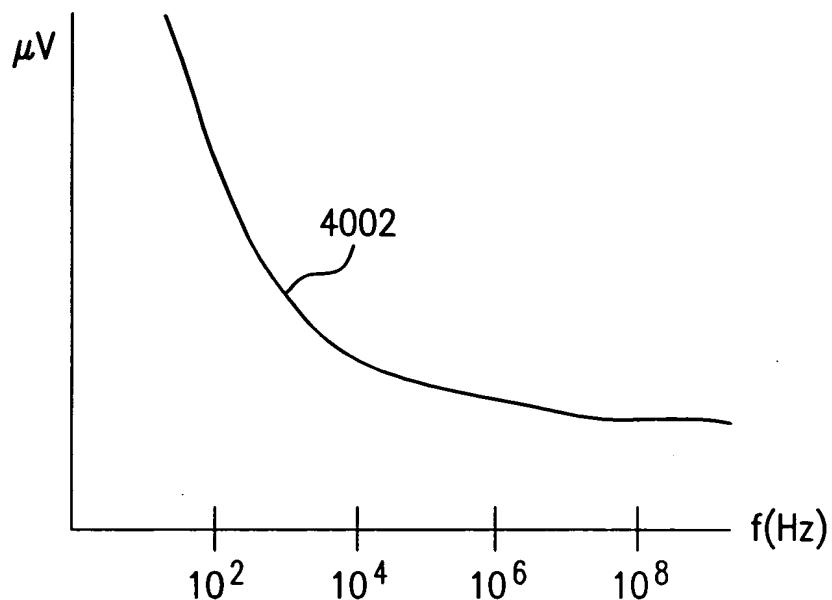


FIG. 40

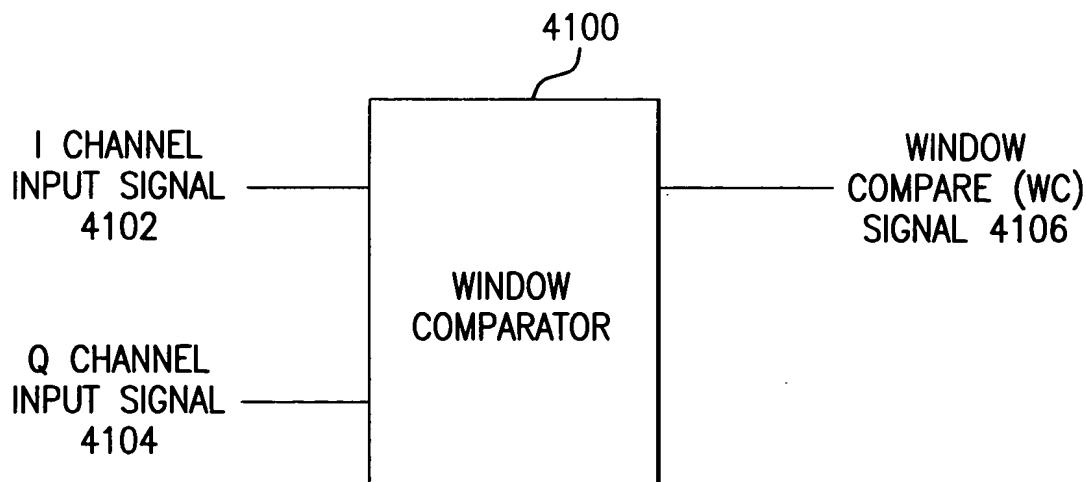


FIG. 41

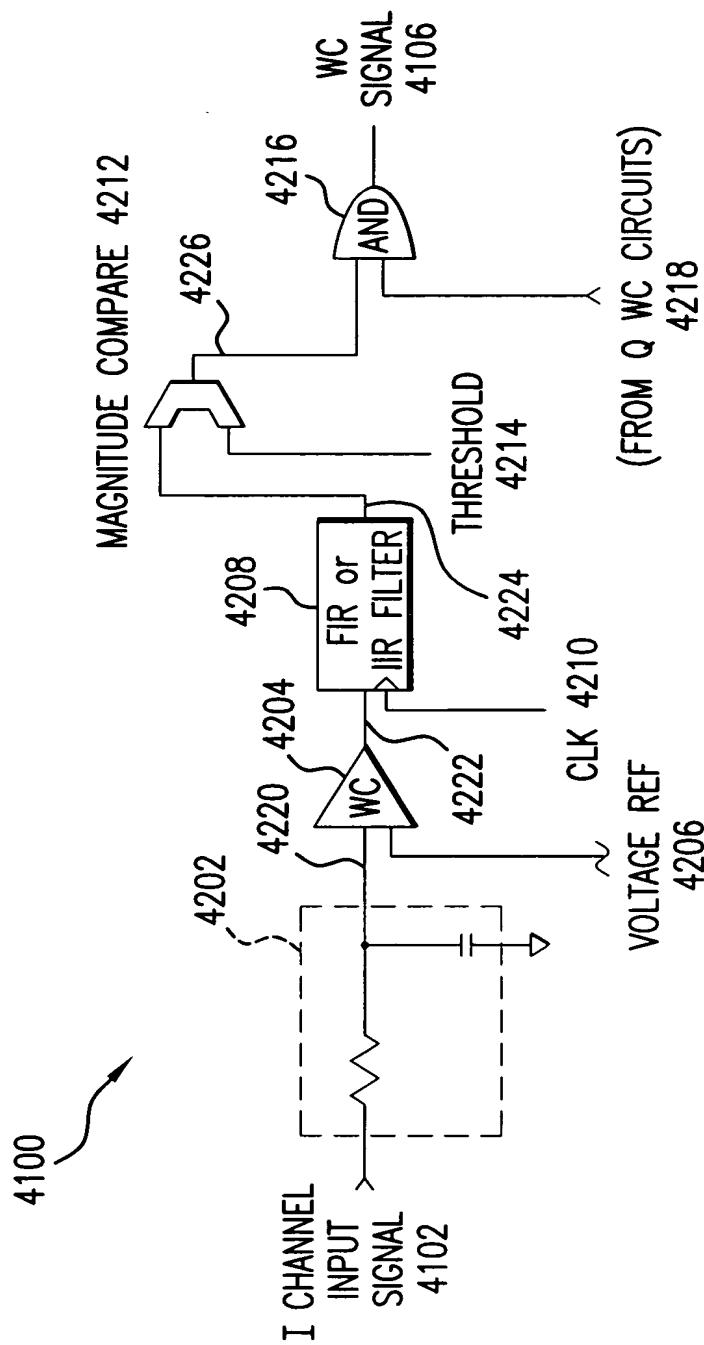


FIG. 42

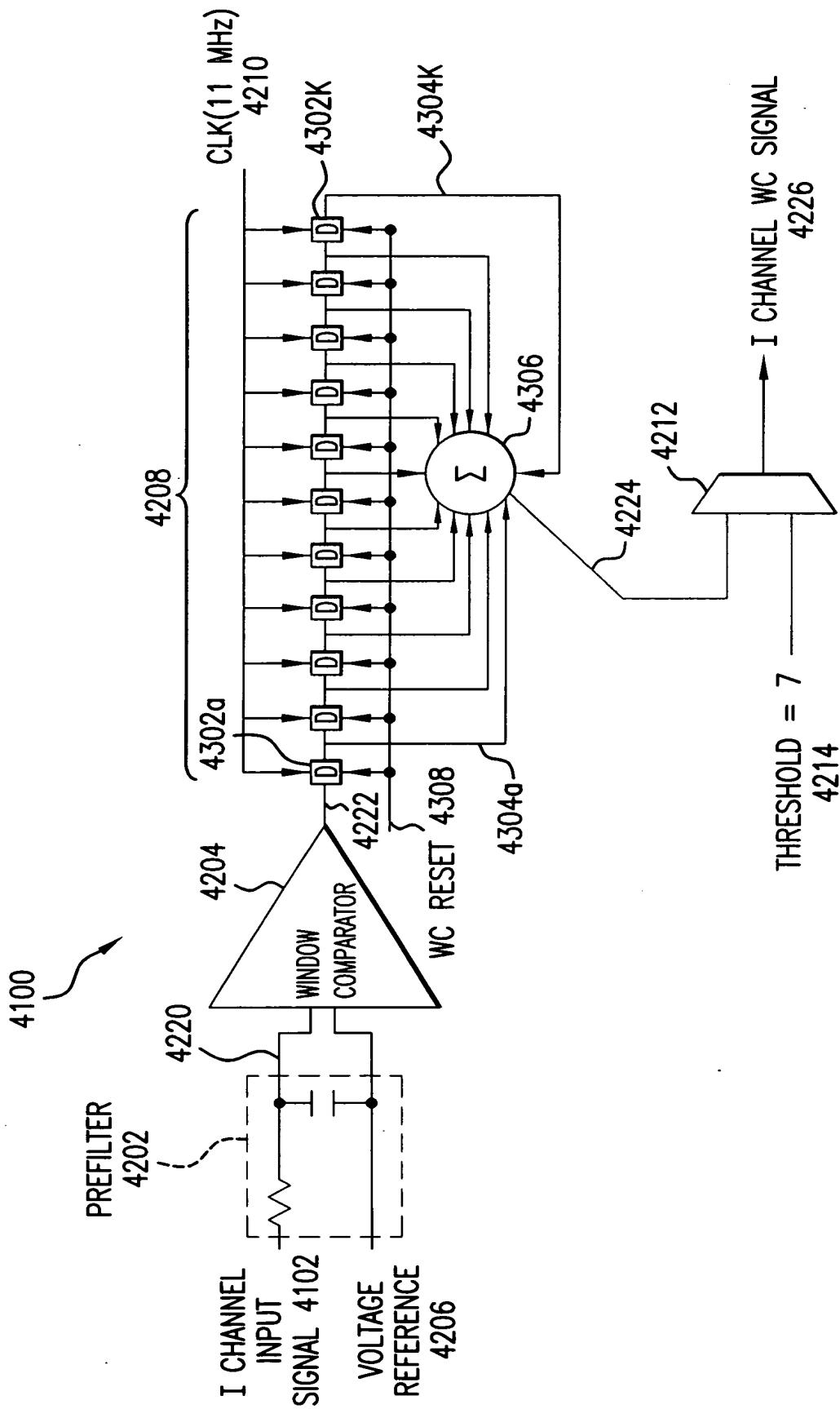


FIG. 43



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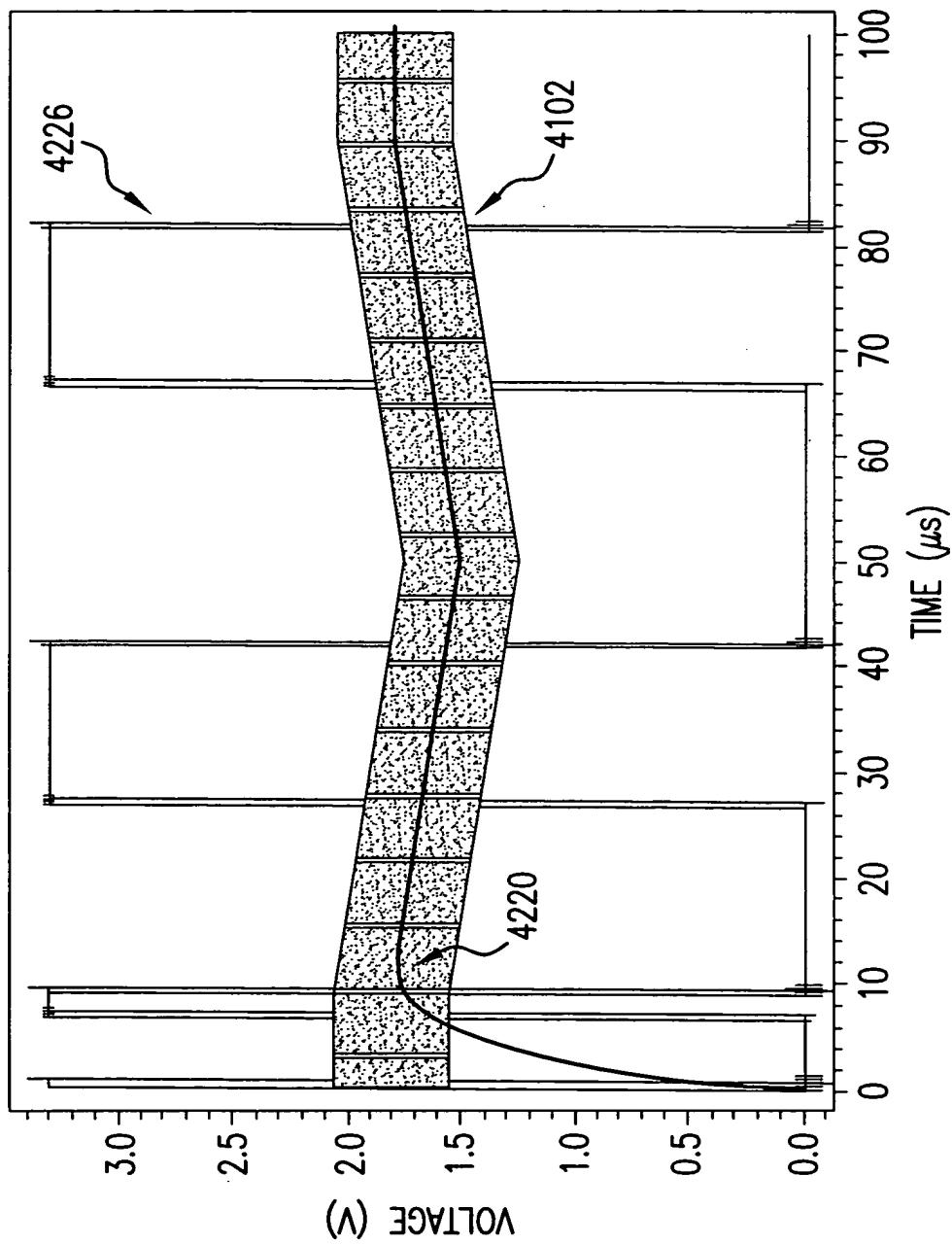


FIG. 44

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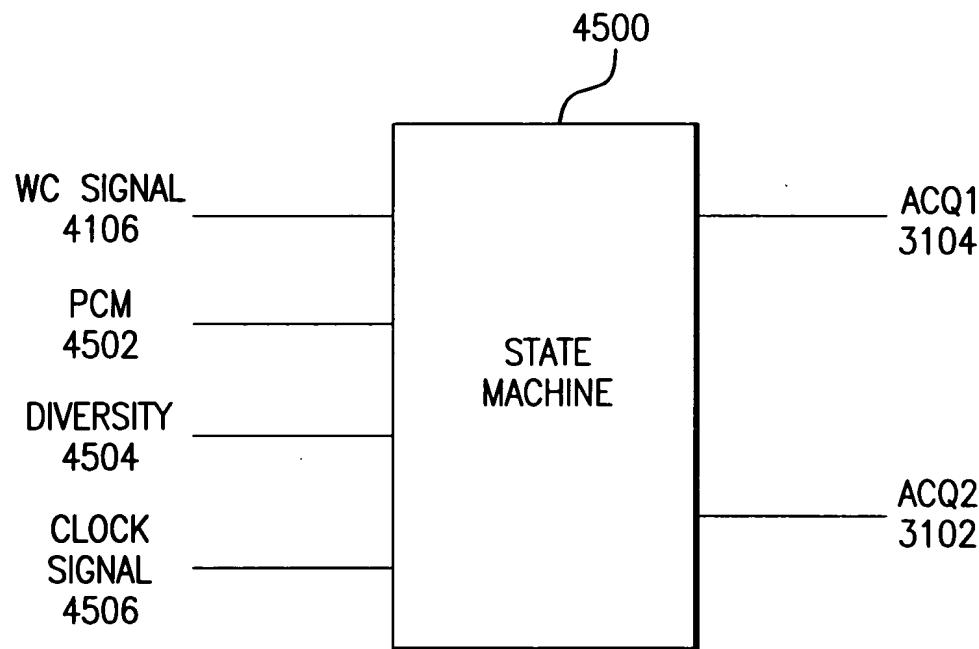


FIG. 45

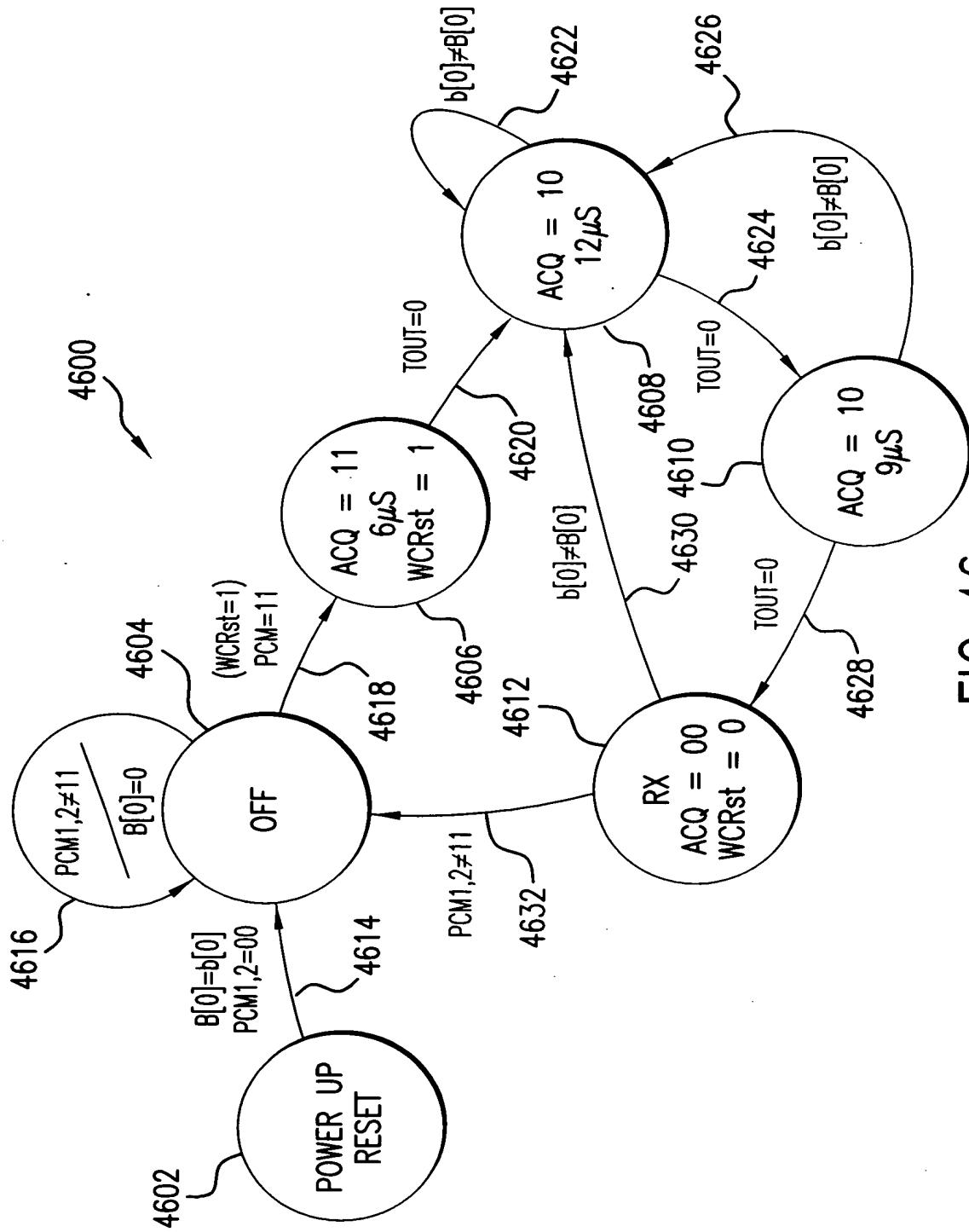


FIG. 46

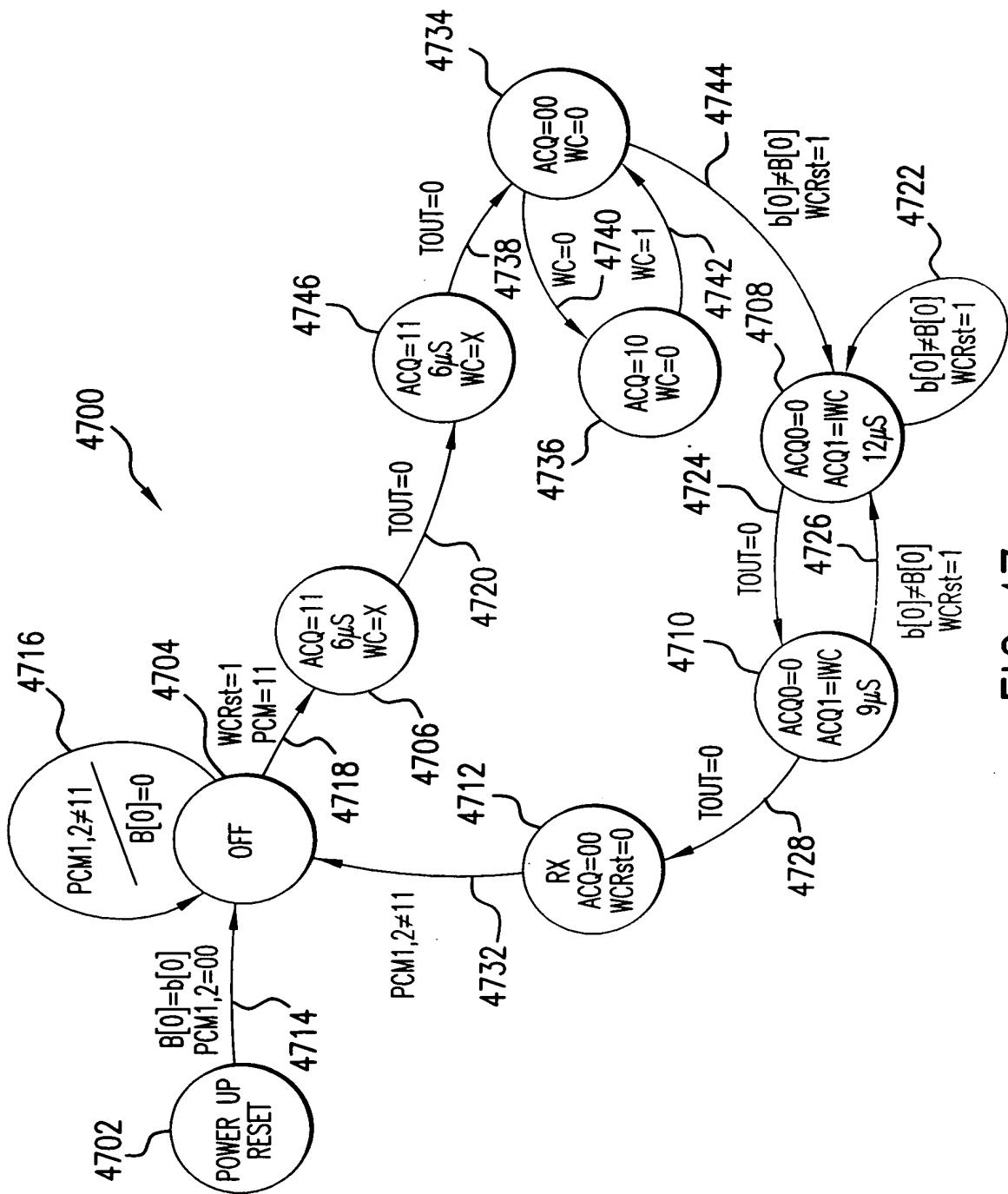


FIG. 47

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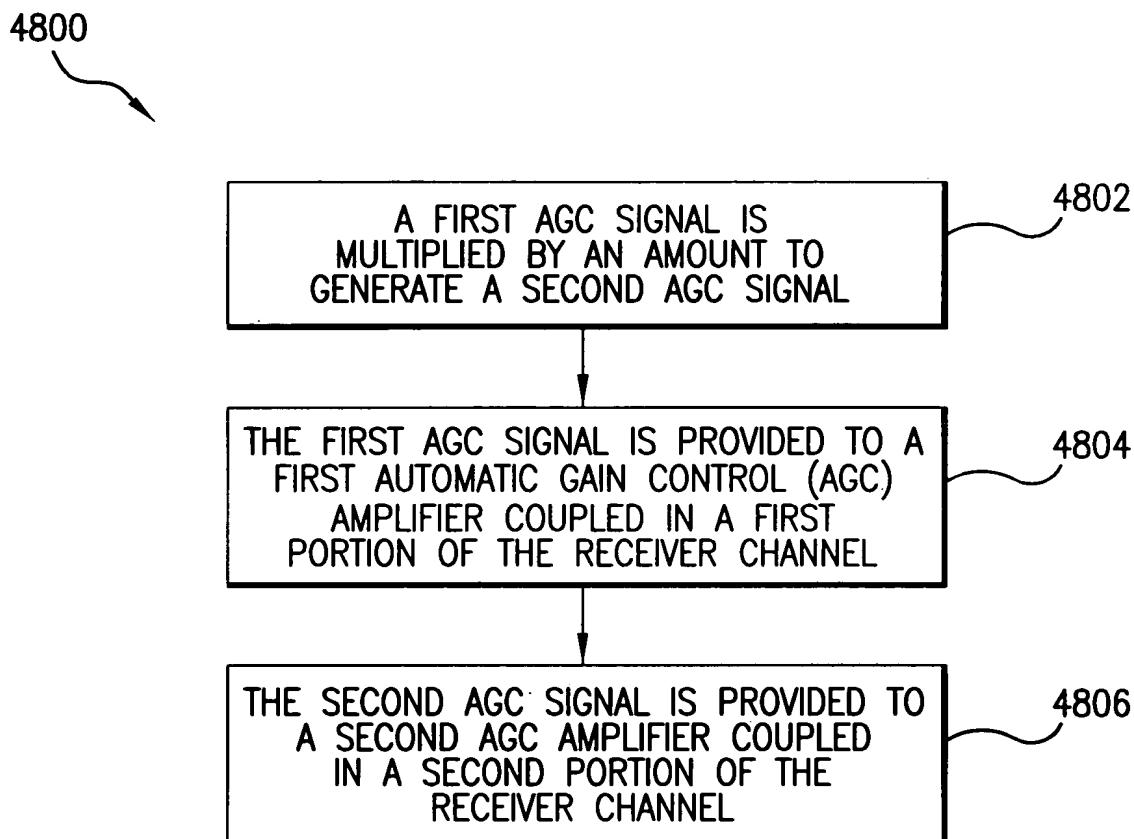


FIG. 48

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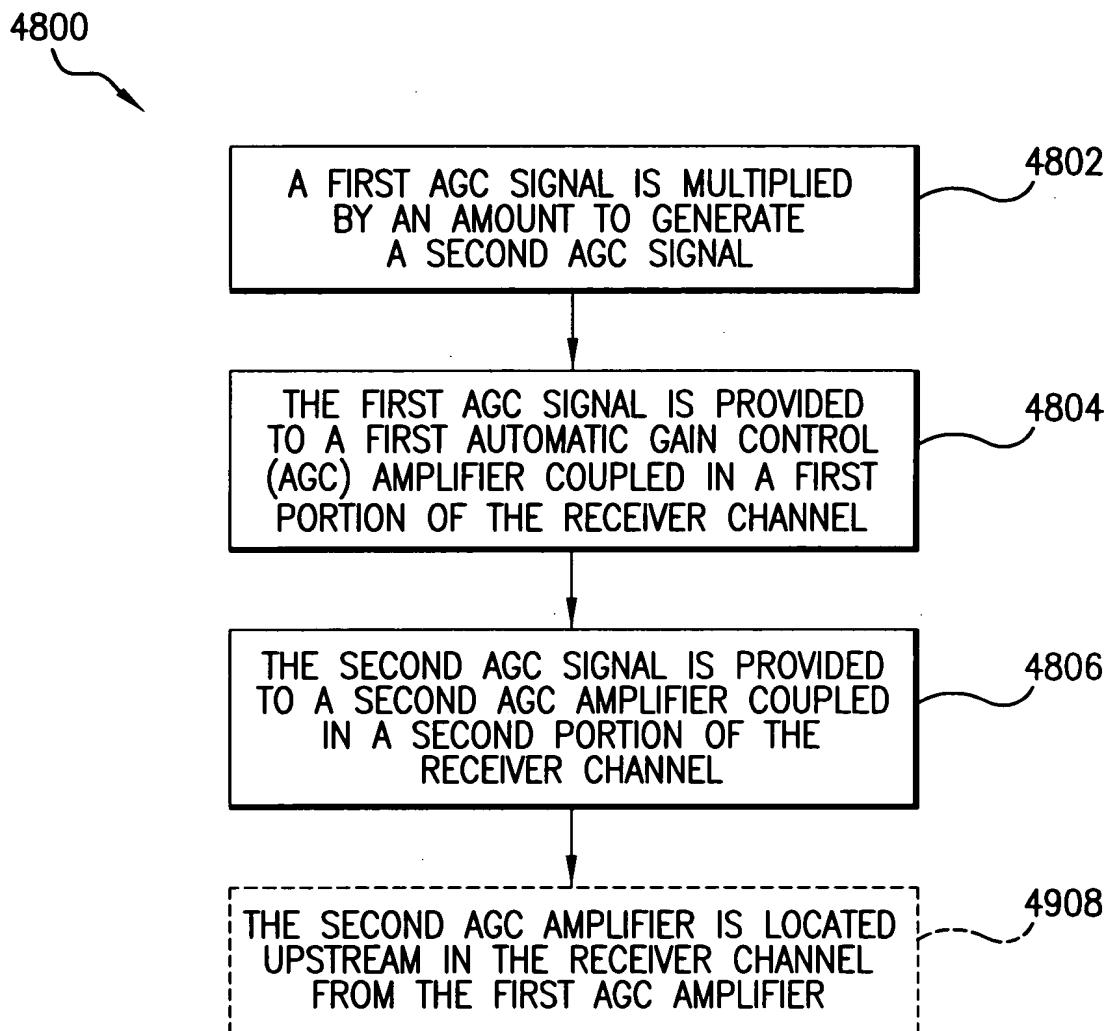


FIG. 49

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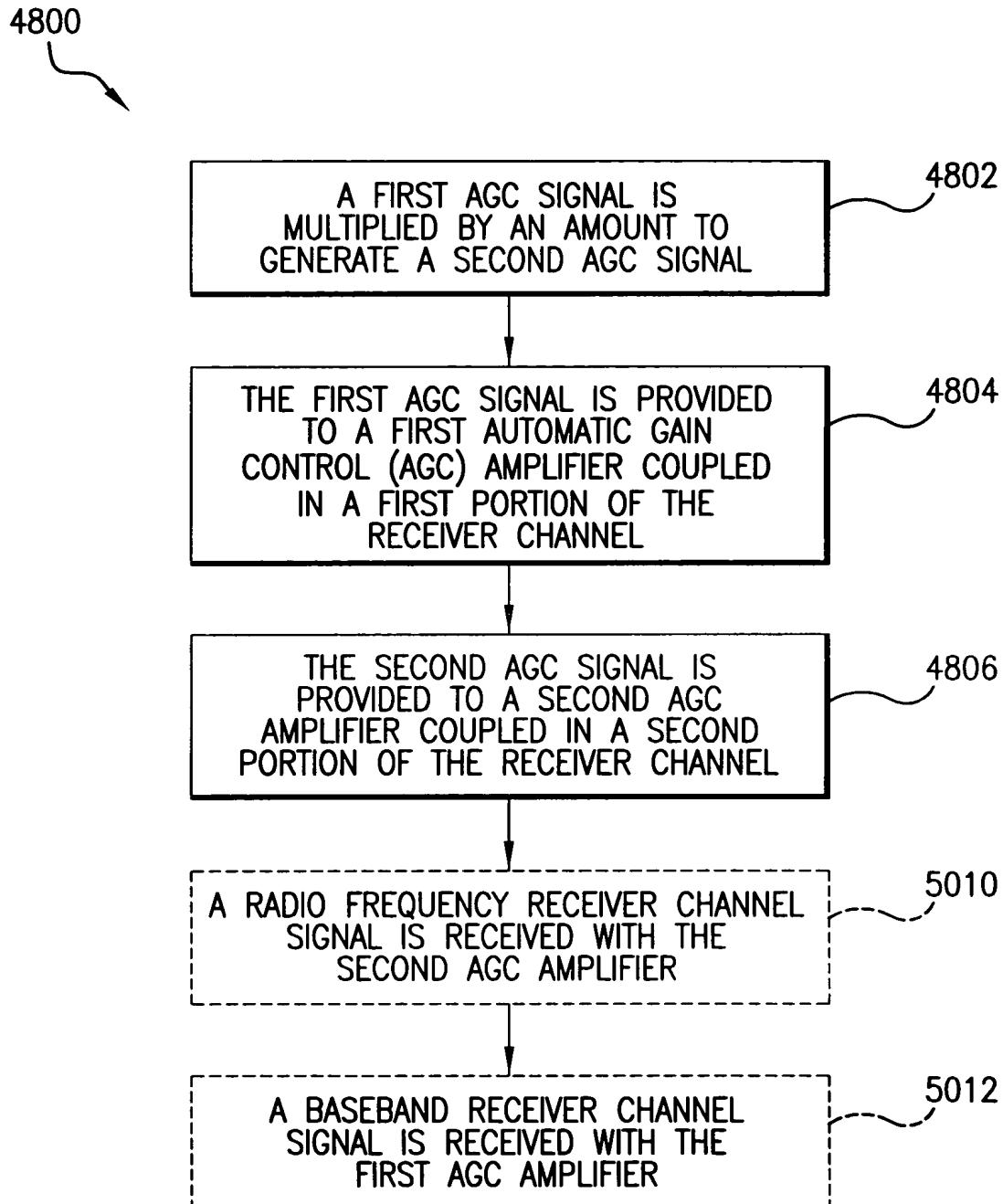


FIG. 50

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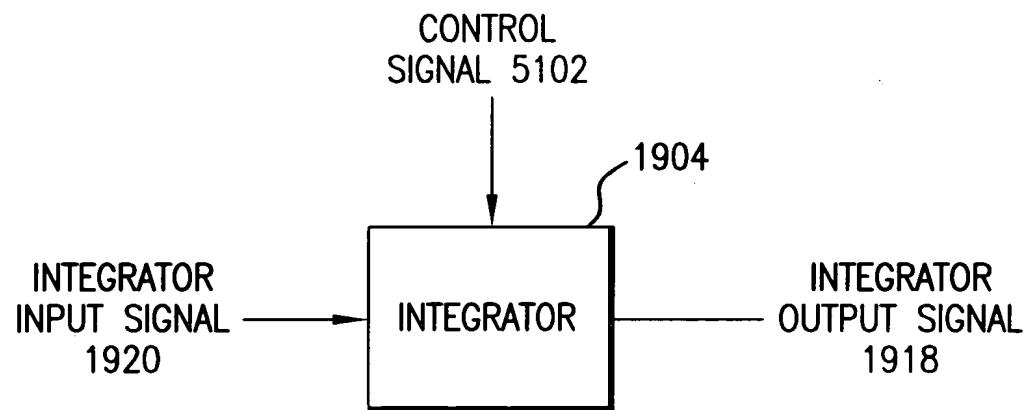


FIG. 51

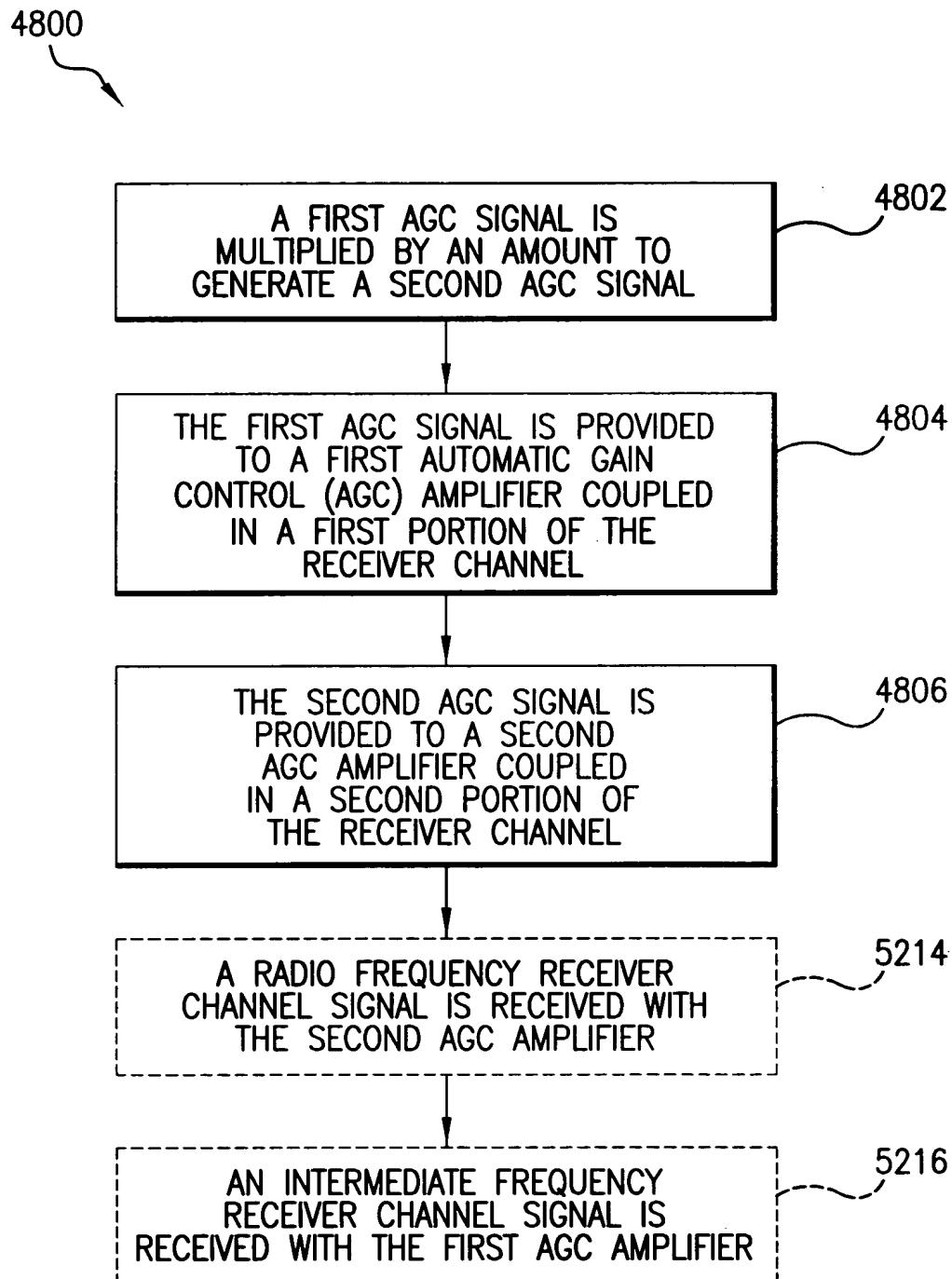


FIG. 52